

THE CULTIVATOR.

NEW

"TO IMPROVE THE SOIL AND MIND."

SERIES.

VOL. IV.

ALBANY, JULY, 1847.

No. 7.

ACTION AND INGREDIENTS OF MANURES.

LETTER TO PROF. WEBSTER.

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Giessen, May 1, 1846:

MY DEAR SIR—The discovery of ammonia in soils, to which I alluded in my last, and the important results to which it must lead, will appear in clearer light after a brief consideration of the subject of manures.

The time is not long gone by, when plants were supposed to owe their growth to some mysterious creative power, the living principle possessed. This opinion, since the element of quantity has been carried from physics into the other departments of science, and especially into chemistry, has gradually lost its supporters. Occasionally, however, a man may be found, who demurs to a new doctrine in agricultural chemistry, with the expression—"You have not taken into proper consideration the action of the vital principle."

It is, nevertheless, well known, that without water, plants will not grow; and that they flourish better in some soils than in others; and that the addition of manures has been instrumental in greatly augmenting the produce of fields.

What the essential ingredients of manures are, and how they act, and what are the sources of the ingredients of plants, especially of carbon and nitrogen, have been objects of repeated investigation by some of the first scientific men of the age.

You will remember that Saussure recognized, some time since, alkalies and alkaline earths in the ashes of plants; but found them in such variable proportions, that he came to the conclusion that they were non-essential,—occurring in the plants merely because they were present in the soil in a soluble state.

You are aware that Boussingault has expressed the opinion, after a variety of experiments, that the value of a manure is in near relation to its per centage of ammonia.

Mulder, has, you know, written much in support of the view that ulmic and humic acids, ulmates and humates, etc., in one form and another, minister largely to vegetation. And in the last volume of Berzelius' *Jahrs-Bericht*, received a day or two since, I see the above-named distinguished chemist has been recently conducting a series of experiments, lending, in his view, support to his previously expressed opinions.

Liebig differs from them all. He found that though the relative amounts of magnesia and lime, potash and soda, occurring in the ashes of a Savoy pine, and of the same species grown elsewhere, might be greatly unlike,—the amount of oxygen in combination with the metals, calcium, magnesium, potassium, sodium and iron, of the ashes, was a *constant quantity*. This observation bears the stamp of its great author, and its importance

can only be estimated in connection with a detailed exposition of the evolution of organic acids, alkaloids, and indifferent bodies in the vegetable organism. Of this you will not expect me here to write.

This great law he discovered and laid down: that for the full development of the organic tissues of each species, a certain per centage of inorganic bases is indispensable; and that of these, potash, to a certain amount, may replace soda, and magnesia lime; but the *amount of oxygen must be constant*.

In other words, the equivalents of base must be a constant quantity for each species.

When you take in hand a number of ash analyses of the same species of plant grown on different soils, and calculate therefrom the per centage of oxygen of the bases, you will find that the results differ but little from each other. For different species the per centages of oxygen vary, as do also the relative and absolute amounts of the several bases and acids.

Liebig, as you are already aware, takes the position that the sources of carbon and nitrogen are carbonic acid and ammonia of the air, and *not* soluble organic bodies met with in some soils. He asks if it be not so, where the thousands of tons of wood, grown for centuries in succession, on a soil containing but traces of organic matter, have derived their carbon? And again:

What replaces the nitrogen shipped from Holland in hundreds of thousands of pounds of cheese yearly, if the ammonia does not come from something besides decaying organic matter?

A meadow, yielding year after year, without manure, an uniform moderate crop, by addition of gypsum, had its produce increased a third. The addition of ashes increased its production another third; and the distribution of bone ashes another third.

So here, by the addition of mineral matters, its capacity of production had been doubled. No new source of carbon had been provided—no new source of ammonia—and yet the hay gathered after the additions of mineral matter, contained twice as much carbon, and at least twice as much nitrogen as before.

Where did these ingredients come from?

Boussingault's ingenious experiments with regard to the sources of carbon, had yielded a partial answer. The carbon came from the carbonic acid of the air. The ammonia, as you will presently perceive, could have had no other origin.

Farraday, I need not mention to you, found ammonia in almost all bodies. Even metals, dropped in fused potash, yielded ammonia. Sand, heated to redness, and poured, upon cooling, along the back of the hand, immediately after, yielded ammonia.

Mulder has thrown out the idea, that organic bodies in the progress of decomposition, produce ammonia, not alone by parting with their nitrogen in this form, but by causing, through the molecular action attendant upon the decomposition, the union of the nitrogen of the air with the hydrogen of the organic body, or of water decomposed at the same time. Berzelius, even, says that if iron filings be placed in the bottom of a jar, they will oxydate at the expense of oxygen of water, producing, by the union of the hydrogen thus set free with the nitrogen of the air, ammonia.

Professor Will, of the Giessen Laboratory, has shown by the most conclusive experiments, in opposition to the latter most distinguished chemist, and to M. Rieset, who entertained a similar view, that nitrogen unites with hydrogen under no such circumstances; and Mulder's view fails in quantitative experiment of its support. Indeed, the experiments of the Dutch chemist, detailed in the last *Jahrs-Bericht*, having a *qualitative* purpose merely, have not won the conviction of Berzelius.

Ammonia, Liebig maintains, is a body not indebted to organism for its being; that it is to be classed with iron and potash, and soda and oxygen, whose quantity within the organism of plants and animals, and without, is, in general terms, constant. He holds, that when the required physical properties have been given to a soil, and the necessary inorganic ingredients, in suitable solubility, the ammonia and carbonic acid, with healthful falls of rain, will provide themselves.

Muck serves so eminently well in giving the requisite porosity to a soil, that a wide-spread conviction prevails in America, that somehow, it becomes dissolved, and passes, according to Mulder's view, directly into the vegetable economy, without first becoming carbonic acid, ammonia, and water.

I found ammonia in the glacier-ice that comes down from the summit of Mt. Blanc.

The quantity, though small, was determinable by the balance, and the fact is established, that even at these elevations, this ingredient does not fail.

I herewith send you the determinations of my friend Dr. Krockner, now Professor of Chemistry and Physics in the Agricultural Institute of Breslau, in Silesia.

TABLE
Of the Ammonia Contained in Soils, by DR. KROCKNER.

SOILS EXAMINED.	Ammonia in 100 parts of air-dried soil.	Specific Gravity.	Pounds of Ammonia in a soil of one Hectare in area, & 0.25 metre deep
Clay soil before manuring,	0.170	2.39	20314
Clay soil,	0.163	2.42	19723
Surface soil. Hohenheim,	0.156	2.40	18720
Subsoil of the same,	0.104	2.41	12532
Clay soil before manuring,	0.149	2.41	17953
Clay soil,	0.147	2.41	17713
Soil for barley,	0.143	2.44	17446
Clay soil before manuring,	0.139	2.41	16749
Loam,	0.135	2.45	16537
Loam,	0.133	2.45	16292
Illinois prairie soil,	0.116	2.18	12644
Cultivated sandy soil,	0.096	2.50	12000
Excavated loam earth,	0.088	2.50	11009
Cultivated sandy soil,	0.056	2.57	7028
Nearly pure sand,	0.031	2.61	4045
	0.0988	....	11952
	0.0955	....	11552
	0.0768	....	9288
Varieties of Marl,	0.0736	2.42	8904
	0.0579	....	7004
	0.0077	....	931
	0.0047	....	568

A metre is 39.37 inches; so 0.25 metre are a little more than ten inches, or five-sixths of a foot.

A hectare contains two and a half English acres. I have converted the last column into English values, and adjoin them.

NAME OF SOILS EXAMINED.

NAME OF SOILS EXAMINED.	Ammonia in a stratum one acre in area and one foot in depth, in pounds avoirdupois.
Clay soil, before manuring,	9751
Clay soil,	9463
Surface soil from Hohenheim,	8985
Subsoil from the same field,	6015
Clay soil before manuring,	8617
Clay soil,	8502
Soil for Barley,	8373
Clay soil before manuring,	8039
Loam,	7938
Loam,	7820
Illinois prairie soil,	6069
Cultivated sandy soil,	5760
Excavated loam earth,	5280
Cultivated sandy soil,	3373
	5637
	5545
	4458
Varieties of Marl,	4274
	3362
	447
	272

The "excavated earth" was taken from a depth below all traces of organic matter. The Illinois prairie soil was brought by a returning German, in paper, from a field that had been cultivated without manuring already ten years I think.

Now, what farmer ever carted from his manure yards 8000 pounds of ammonia to an acre of land? One may almost say, what farmer ever carted the tenth, or even the twentieth part of this amount.

It is obvious that the ammonia spread on fields in the ordinary distribution of barn-yard products, is of no moment. The quantity, with usual falls of rain, greatly exceeds, in the course of a season any conceivable supply by human instrumentality. These results put the question of the sources of ammonia or of nitrogen out of all doubt.

But if, with the manure heap and the liquid accumulations of the barn-yard, transported to the fields, the ammonia be not the chief ingredient, or an important one, to what are we to attribute the unquestioned value of stable products and night soil? Prof. Liebig has shown, that if plants be manured with the ashes of plants of the same species, as the grasses of our western country are when burned over in the fall, they are supplied with their natural inorganic food. He has shown the truth of the principle in a great variety of ways. Among others, he has been feeding some grape vines with the mineral matters of their ashes, in the proportions in which analyses have shown them to be present; and their development has been luxuriant in the most remarkable degree, though the soil upon which they have been grown is little better than sand. He made a variety of experiments with grains, roots, flowers, &c., which I had last year the pleasure of following, and this spring he has commenced them upon a more extended scale.

Let us consider what these ashes are, and what manure is.

Herbivorous animals derive their nourishment from the vegetable kingdom exclusively, their food being grass, grains, roots, &c. These, with their organic and inorganic matters are eaten. A portion of them is assimilated, becoming bone, muscle, tendon, fat, etc. Another portion is voided in the form of excrementitious matter. In process of time, the bones and tissues follow the same course. What to-day forms the eye, with its sulphur, and its phosphorus, and carbon, &c., will have accomplished its office, and left the organism to mingle with the excrements, or escape as carbonic acid and water from the lungs. At length, all

the inorganic matters will reappear in the voided products.

Carnivorous animals satiate their hunger from the already developed organism of the herbivora. Their food, of course, contains merely what the plants had furnished. In their excrements reappear the soluble and insoluble inorganic substances, mingled more or less, as is the case also with the herbivora, with indigestible matter, such as hair or woody fibre.

The animal organism has performed the office of a mill. Grain was supplied. Instead of appearing as flour and bran, and the intermediate meal, it appears after intervals of greater or less length, in soluble inorganic salts in the liquid excrements, in insoluble inorganic salts in the solid excrements, and in carbonic acid and water.

Now after burning a plant, what remains? It contained when growing, carbon, nitrogen, hydrogen, and oxygen, as organic bodies, and water.

It contained also, in variable proportions, common salt, potash, soda, magnesia, lime, iron, phosphorus, sulphur, and silica.

The first four were expelled in the combustion. The remaining ingredients, for the most part, remained unchanged.*

Had the plant gone into the body of an animal, and in the course of its evolutions through the organism lost its carbon, hydrogen, nitrogen, and oxygen, the remaining ingredients would have been the same as before.

In the one case, the plant would have been burned in the organism; in the other in a crucible. The ashes and the excrements are substantially the same.

The principle of the rational improvement of soils is, then,

1st. *A proper physical constitution* for the retention of moisture, escape of surplus rains, expansion of roots, etc. Unless the moisture be detained, the ammonia that fell with it will escape; and as the inorganic matters contained in the soil must be sought, a free and wide expansion of the roots is indispensable to vigorous growth. This texture will be derived from the plow, harrow, spade, and hoe, and admixtures of sand in some soils, clay in others, loam in others, and organic refuse in most.

2d. *A supply of the inorganic ingredients*, which the ashes of the plant to be cultivated contains, in such a state that they may be readily taken into the vegetable system, and yet not so soluble as to be washed away by rains.

I will venture to add a single additional remark to this already long letter.

Seven inorganic bodies included in the ash products above mentioned, are absolutely indispensable to the growth of plants. A soil wanting these cannot yield seed capable of reproducing its kind.

Here, then, all the mysteries of gypsum being serviceable on some soils, and for a number of years, and then being no longer of use,—of its benefiting some soils greatly, and others not at all,—the great value of quick-lime or of calcareous marl on some lands, and their uselessness on others,—the profit of employing bone dust (phosphate of magnesia and lime,) generally,—the worth in some instances of salt,—of straw, plowed in,—of poudrette,—of guano,—horn-scrappings,—soda,—saltpetre, etc.,—become solved.

Some soils have already sufficient sulphuric acid and lime. Gypsum would not benefit them. Others have enough of all the remaining ingredients, but lack sulphuric acid. Gypsum supplies the deficiency.

Two or three years' culture, or ten perhaps, exhaust

* This is not strictly true. The phosphorous and sulphur would become by union with oxygen, phosphoric and sulphuric acids. The same qualification may be extended to the paragraph which follows.

another ingredient. Bone-dust possibly supplies the want.

In time, however, still another recurs. Potash or soluble silica. Gypsum, in never so large a quantity, contains no trace of phosphoric acid, or potash, or silica.

Soda may be wanting. Salt will supply it.

The texture—the porosity necessary to retain moisture, carbonic acid, and ammonia, may require improvement. Straw, or leaves plowed in, accomplish the end.

Stable manure contains the ashes of the oat, and corn, and hay, with their carbonates, phosphates, sulphates, and silicates, with such an abundance of organic refuse, that it meets the demands of most soils.

A drouth prevents mineral matters from being taken into plants, and without rains the ammonia is not brought down from the air.

Night soil and guano are the ashes of animal and vegetable organism burned in animal bodies. They are the ashes of plants—the essential food of plants. Hence their value as manures.

Explanations of many things, hitherto obscure, present themselves to any one after contemplating this view of manures. I will not enter upon the subject of the rotation of crops, the object of which is, chiefly, the renewal of soluble mineral matters by the action of the atmosphere, changes of temperature, carbonated water, etc.

I have no doubt that ere long the application of these doctrines will reveal in the many, now considered, quite exhausted farms of New England, untold sources of wealth. You would think me sanguine beyond reason if I were to express my honest conviction of the still virgin capabilities of the soil of our pilgrim fathers, and I will not venture it. We shall see.

I am, &c.,

EBEN N. HORSFORD.

FINE FARMING AND GREAT CROPS.—James Gowen, of Mt. Airy, near Philadelphia, raised, in 1845, a ten acre field of corn, which averaged 95 bushels of shelled corn per acre. It had been in grass, without manure, five years; it was plowed and the field manured with a ton of guano, costing \$40. The rows were 3½ feet apart and the plants 12 inches. (This distance would be too great for small northern corn.) Judicious harrowing, in preparation, cleared the ground thoroughly of grass and weeds, and it was kept perfectly clean afterwards at little cost. There were 7 acres of winter wheat, and one of spring wheat, the whole computed to average over forty bushels per acre. The spring wheat was after an acre of carrots, of 900 bushels, and was followed by an acre of turneps of 1000 bushels; the whole worth over \$500,—from 1 acre in two years. The carrot crop the same year was 1000 bushels per acre, sugar parsnep 800 bushels, ruta бага over 600, potatoes, 3 acres, over 200 each. These were only part of the crops. Besides, there were more than 100 tons of excellent hay, though the season was unfavorable. All on an upland farm of about 100 acres, which maintained during the summer over 60 head of cattle. So much for manure, subsoiling, fine culture, draining, rotation, &c.

WHEAT AND CLOVER AFTER CORN.—The Michigan Farmer mentions a case where a sixty acre corn field was sown with wheat, while the corn was yet standing, and which was cultivated in. Late in the fall the corn was taken off, the wheat at the time covering the corn handsomely, and it subsequently afforded a fine crop. A successful case is also mentioned of sowing clover-seed among corn. It was sown immediately before going through the corn the last time, and followed with the cultivator. When the corn was harvested the clover was several inches high.

BREEDING HORSES—No. II.

SINCE my former article on this subject was written, I have met with a communication in the *London Veterinarian* for February last, written by WILLIAM GOODWIN, Veterinary Surgeon to the Queen. Mr. G. begins by saying that "it is an admitted fact by all those conversant with the horse market in England, that good horses were never known to be so scarce as they now are." The kinds of horses of which there is the greatest scarcity, are hunters and riding horses, "it being," as he says, "but too true that the superior riding horse, or valuable hunter, has become almost a *rara-avis*, as compared with former days." His idea appears to be, that due regard has not been paid, in breeding, to substance and constitution. The following paragraph shows that the thorough-bred racer is not the kind of horse he is desirous of procuring for the purposes mentioned:

"Some years since, when the Earl of Albemarle was Master of the Horse, his Lordship sent me to Cheltenham, to look at a carriage horse that had been reported to him as likely to make an acquisition to the royal stables. On setting out, I had but little idea that I should find the required description of animal in that part of the country; but directly I saw the horse, I did not hesitate for a moment to make purchase of him, the price being but 110 guineas, [about \$550.] He belonged to Mr. James, the livery stable keeper there, who informed me that an own brother to the horse, equally as fine an animal, had been sold the previous year to Mr. Elmore, who had sold him to the Master of the Horse to Queen Adelaide, for the royal stables. Two finer horses were never seen; and they were both about sixteen hands three inches high. Now, these horses were got by a thorough-bred horse out of a Welch pony mare, not more than fourteen hands high. Had these circumstances occurred in a stud, the results obtained would have probably led to the repetition of the cross often enough to have elicited some highly important facts."

The first American authority to which I would refer, to show the degeneracy of the blood horse, is the late CADWALLADER R. COLDEN, a gentleman eminently distinguished in his day for his extensive knowledge of horses, and a devoted amateur of the turf. In the first volume of the *New-York Sporting Magazine*, (1833,) is a series of articles from his pen, under the signature of "AN OLD TURFMAN," entitled "*Blood Horses of the Olden Time*." He observes—

"That the English [blood] horses of the present day are very different in form, appearance, size, and in many instances those marks indicative of high breeding, from what they were seventy or eighty years ago, is certain. * * * That those bred of late years in America are running into the same extremes of height and length, as those now bred in England, there cannot be a question; and although it is possible, (which, by the by, admits of a doubt,) that they may have acquired some small addition of speed, this is overbalanced by their general want of endurance."

After having fully discussed and considered this point, he adds in conclusion—"that there has been a falling off in the American-bred horses, in those essential requisites, *form, substance, and durability*, I am warranted from nearly forty years' observation in asserting."

Mr. COLDEN considered the chief error in breeding, to be the same here that has prevailed in England—that is a passion for *tall* horses, with the ability to make a long stride. He says it is this fashion which has induced breeders to "send their mares to some tall, lath-like made animal, sixteen hands, or sixteen hands and

a half high, because he has what they term *size*; that is, nine times out of ten, very long and ill-shapen legs; nothing in his style or form indicative of stamina, strength, or continuance."

Such, he remarks, is the kind of animal which many breeders have selected, "instead of one of moderate height, and of great muscular power and substance, which they will call a *little horse*."

Gen. THOS. EMORY, of Md., the breeder of the noted running mare Lady Clifden, in a letter to the *American Turf Register*, (vol. IX., March, 1838,) speaks of the horses which he had seen during a visit he had then lately made to England. After mentioning *Camel*, *The Colonel*, and *Caccia Piatti*, he says—"I saw no other horses in England that I would breed from gratis, except the *Black Arabian* in the king's stud, which they have allowed to be sold to the continent without, as I understood, having bred but few mares to him. This horse bears all the marks of the pure Arabian,—a high racing form, silky hair, and legs that look as clean and flinty as those of the deer, with the finest game head, terminated by a muzzle containing nostrils which, when distended, you might thrust your fist in. The passion in England for breeding slapping colts to run in their two or three year old stakes, completely puts this noble horse under the ban. They will probably have occasion to regret his loss."

An idea seems to prevail that a horse which exhibits the most speed upon the turf, must of course be best calculated for use as a roadster or carriage horse. Without intending to discuss the point in detail, it may be well to inquire whether the form and proportions which confer the greatest power and speed in the gallop, would also enable the animal to move to the best advantage in the gait required for the carriage? To my mind it appears evident that the different action in running and trotting, requires a corresponding difference of mechanism, to confer the greatest facility of movement in both cases.

To illustrate this, take an example. Perhaps a better model of an animal for racing or galloping, could not be selected, than the hare. Its mode of progression, when pursued, is by a succession of rapid leaps, and the perfection of its organization for such movements, is evinced by its astonishing performances—a space of from ten to twelve feet being passed over at a single bound.* But what sort of a figure would a hare cut at a *trot*? Observe the motion of horses whose shape approaches nearest the hare: a long, low, slouching gait, moving, as it were, "a side at a time," distinguishes them. Take, for instance, the celebrated English race horse Eclipse.

Prof. ST. BELL, in his "*Essay on the Proportions of Eclipse*," states that he was one inch higher from the top of the rump to the ground, than from the withers to the ground; and he observes that this form, together with the disproportionate size of the hind quarters, necessarily occasioned a degree of wavering in the croup, perceptible and somewhat unpleasant in his gallop."

It is a well-known fact that many horses which run well, are, when put to a trot, liable to stumble—a fact so generally acknowledged as to give rise to the trite expression,—"*a race horse is a stumbler*."

Again, does it not frequently occur, that very distinguished racing stallions, beget the most worthless de-

* The animal here alluded to is the varying hare, *Lepus variabilis*, of naturalists.

scription of stock for use on the road, and indeed for any useful purposes? On the contrary, it is frequently the case that horses which acquire no particular distinction on the turf, prove to be the most valuable stock getters. This can be substantiated.

Mr. BURKE, in the essay on breeding horses from which I have before quoted, observes—"There are many of our racing stallions that have scarcely ever begotten a foal that turned out a good racer; but that when put to mares not quite thorough-bred, have produced hunters of first-rate capabilities."

An idea prevails, also, to some extent, that the Arab horses cannot improve the English stock, because their progeny do not always prove to be racers. In reference to this, a writer in the *Farmers' Magazine*, (1845,) cites several examples of Arab horses having produced valuable stock. The first is the *Cole Arabian*, so called. "He had," says the writer, "some of the best Irish mares put to him, but none of their progeny could run with the common average of English and Irish race horses, except when receiving weight; and accordingly he was kept at Dublin for half stock, and his stock proved most excellent, sinewy, and spirited, with extraordinary powers as hunters or roadsters, some of them distinguishing themselves as steeple chasers." He gives another example: "We have another instance in the fine grey Arabian imported by Gen. Brownrigg: the

best Irish and English blood were put to him for trial; but although he got some splendid hunters, as to racing, it is altogether out of the question."

But although the horses of English blood have of late years generally beaten those of eastern origin on the course, it is not certain that a similar result would ensue in a longer contest where strength and endurance would be more required. An account is given of a race which took place at St. Petersburg, in Russia, on the 4th of August, 1825, in which an English horse ran 49 $\frac{3}{4}$ miles in two hours and forty minutes. This was certainly an extraordinary performance, though it appears to have been exceeded by a Russian or Circassian horse, in another race which took place on the banks of the Don, on the 28th of April, 1826. The distance run was 44 $\frac{3}{4}$ miles, in a continuous line. There were twenty-five horses engaged in the race. The winner, a horse called Jason, performed the distance in two hours and five minutes. Ten horses, besides the winner, arrived at the goal in good condition, but of the remaining fourteen, most "died during the race or soon afterwards." A comparison of the performances of these two horses, shows that the English horse ran 18 miles 210 rods per hour, while the Circassian ran 21 miles 153 $\frac{1}{4}$ rods in the same time; and that the English horse would have been twenty-one minutes more than the Circassian in performing the 44 $\frac{3}{4}$ miles. EQUUS.

DEBATE ON THE PROFITS OF FARMING.

AMATEURS may engage in agriculture for the poetry of it; but most of those who follow the business for a livelihood, are under the necessity of making its profits the primary object. There is an impression, more or less prevalent, that farming is in general less profitable than most other occupations. We will not undertake to say how far this impression is founded in fact; but it will be obvious to those who examine the subject, that from the loose manner in which accounts of farming operations are generally kept, the actual profit or loss can hardly ever be determined with anything like accuracy.

Believing that any remarks which tend to show how the great object of farming can be best attained, will be read with interest and advantage, we submit the following synopsis of a discussion on the "Profits of Farming," which took place at the Agricultural Meetings held at the State House in Boston during the last winter. The reports of the discussion, as published in several of the Boston papers, were given in considerable detail; but we have only attempted to preserve the substance.—EDS.

Mr. SHELDON, of Wilmington, said that though it was sometimes denied that there was any profit in farming, he thought there was no business which gave a better profit. Nine farmers out of ten contrived, even without any system, to get along; and there was no other business that would give a man a living with so little system as most farmers practised. It was true that men of capital often failed; but it was because they farmed to suit their taste and fancy, and not for dollars and cents.

Mr. D. W. LINCOLN, of Worcester, did not agree with Mr. Sheldon as to the profits of farming. He doubted if farming would afford anything more than a comfortable living. He believed that a day laborer, who should let himself to a farmer, would make more money than the farmer who hired him; and would, in ten years' time, be almost able to buy out the farmer for whom he had been laboring, with the very wages paid

to him. It was the common error of agricultural writers to exaggerate. He often heard of raising one hundred bushels of corn on an acre. He would not say that this could not be done; but he would gladly go one hundred miles to see it.

Mr. PETERS, of Westboro', thought that there must be profit in farming. He had succeeded in bringing up a family of eight children on the profits of half of his father's farm. He believed that there was a fair profit to be made by raising corn at 75 cents a bushel, even if you paid \$12 or \$15 a month for labor. He had got 80 bushels from one acre, and could cultivate it for about \$20 an acre.

Hon. Mr. DENNY could not agree to the proposition that all a farmer could get was a mere living. He thought if we were to take two thousand young men; let one half of them become farmers, and let the other half devote themselves to merchandise, in twenty years it would be found that the farmers had made the most money. He insisted that if equal capital, equal skill, and equal industry, were employed in farming as in trade, farming would give the most profit. But farmers do not work so hard as merchants and manufacturers. More mind is requisite to manage a farm well than to perform the usual kinds of mechanical labor.

Lieut. Gov. REED deprecated the practice of young men from the country crowding into the city. It was the disposition of the times—and a very bad disposition it was—not only to get rich, but to make haste to be rich. Farming was not the business to get rich by; but if happiness was an object, there was no business so well adapted to promote this as farming. Taste could not be much gratified by common farmers. They must be contented with a good living profit.

Major B. WHEELER, of Framingham, had long thought farming the pleasantest, and on the whole, the most profitable business that is followed. He had been bred a mechanic; he then engaged in trade; was afterwards concerned in manufacturing; and now he attends to

farming. Many years ago he purchased a farm in Framingham for about \$10,000. He had leased it for three years at the halves. The tenant returned \$800 per annum for his share, and the farm was well treated. He spoke of the profits which had been derived from improving bog lands, and said that Mr. Wetherbee, of Marlborough, had 15 acres of this kind of land which produced last year 60 tons of hay—or four tons to the acre. He spoke of education, as connected with the subject of profitable farming. He thought farmers' boys had not generally a proper kind of education. They work, but they are led along without being required to think. If their minds could be engaged in the business they would like it.

Hon. Mr. CLARK, of Walpole, said that 25 per cent. clear profit had been made by bringing cheap lands into good grass. He had land that cost him ten dollars per acre. He had cleared twenty-five per cent. on this, though he hired all the labor. From 65 square rods of this bog land, which he had brought into English grass, he cut over 3,900 lbs. of hay in 1845. And this hay was then worth forty-four dollars and odd cents, at the market price in Walpole. The average price of hay in his region was \$18 per ton. He used ashes as manure on his grass land, and thought those unleached were worth 12½ cents per bushel. He applied them as soon as the snow is off in spring. They kill out couch or witch grass [?] and induce the growth of clover and good grasses. In Norfolk county, land set in fruit trees would pay a profit of twenty-five per cent. Some of his neighbors had got into the peach business and made 100 per cent. One acre set in peach trees yielded more than \$200 last year.

Mr. BROOKS, of Princeton, said in answer to an inquiry, that he had reclaimed some of his rocky pasture land at a cost of \$100 per acre, and was paid for in a few years in the crop of hay.

Hon. Mr. CALHOUN thought if we were to compare the whole profits of farming with the profits derived from other pursuits, it would be found that farmers on the whole succeed best. Let 100 men go into a city and trade; let 100 go to farming, and at the end of 20 years the 100 farmers will be worth the most money. It is ascertained that of 100 merchants who had done business on Long Wharf, more than ninety became insolvent. In examining the condition of 1000 men who had accounts at a bank, it appeared that only six became independent. These are facts grounded on thorough examination. To take a general view of the subject, out of 100 estates at the probate court, in Boston, ninety were insolvent. These are facts to be put down by the side of farming. He had found that systematic, prudent, and diligent farmers always succeed. Mr. Brooks had said that fifteen per cent might be realized from farming capital. He (Mr. C.) believed it might in many cases be done by farming *intelligently*. He had wondered that farmers generally could get along so well as they actually do in their careless mode of farming. For himself, he had regained his own health by farming. The fresh open air had restored him. One more consideration should have much weight. It had been truly stated by his venerable friend from Framingham, Major Wheeler, that this business naturally leads the mind to contemplation, and to gratitude to the Ruler of the Universe, to whom farmers should look for a blessing on their labors. No occupation so directly leads the mind to reflection on the works of creation. He thought we needed a better system of education for farmers. They should know something of the sciences on which agriculture rests; and science should be brought down so as to be clearly understood, in order to be useful. Minds now run to waste; we quit school and are then permitted to think of nothing but hard work.

Hon. Mr. DENNY said that he had examined into the statement of 97 failing out of 100 engaged in trade, and he believed it was correct. He found that out of 1112 cases of insolvency in this state, during 11 months, only 14 were called farmers; and he had examined as to a part of these, and found that they did not attend strictly to farming. One was a lazy man, another a stage owner, and a third *no man at all*. Yet young men rush to the city to acquire wealth!

Capt. BENJ. PORTER, of Danvers, said that out of one hundred farmers in the circle of his acquaintance in Essex county, there had not been a failure for 40 years. He had farmed and traded, and farmed again. He had been in debt and lain awake many a night to contrive how to take up his notes given in trade. He lost his health, but had recovered it on his farm. He bought a farm that had been neglected and worn out, for \$5,500. It had numerous fruit trees, but they bore no fruit. He commenced by plowing and cross-plowing among the trees—bought yearly \$100 worth of manure, and the third year had \$793 worth of apples. He had also made money by swine. He had a sow that brought nine pigs. When these were sold, [age not stated,] they brought him \$253. He cited the instance of the Howe farm, on the Beverly town line, which during the last 40 years, had been leased to six different men in turn, and all of them had made money on it by having half the proceeds. They went to the farm poor, but several of them made money enough by the profits of farming to buy themselves good farms.

Hon. Mr. RUSSELL, of Princeton, said that he let a farm worth \$3000 to a young man, and he paid the rent—\$150, or five per cent on the investment—supported his family, and laid up \$100 a year. He had seven daughters, and he brought them all up well educated. He left the farm in a good state. The Gill farm in Princeton, 600 acres was rented for a number of years. The lessee retired with a handsome property.

Mr. CLARY, of Conway, spoke of the profitable corn crops which had been raised by some of the members of an agricultural association, or farmer's club, formed in the town to which he belonged. The society chose a committee who examined the lots offered, (ten in number,) measuring two rods of each, and from this made their estimate of yield per acre. The yield of the ten lots was as follows: 134, 132, 111, 110, 95, 92, 90, 86, 76 bushels.

The corn was measured in October, and would probably shrink considerably. The land on which it grew was not naturally rich. It was dressed with 30 or 40 loads of sheep manure to the acre—a part being spread and plowed in, and the remainder put in the hill. The corn was planted in hills three to three and a half feet apart, four stalks to the hill.

Major B. WHEELER, of Framingham, said a townsman of his, Mr. Edmunds, had very recently stated to him, that seven years ago, he bought a farm of 74 acres for \$2,250. He sold off ten acres and a lot of standing wood for \$1,000, leaving his purchase at \$1,250. From these 64 acres he sold produce last year to the amount of \$700, and he hired but eight days' labor. His own labor, therefore, amounted to more than \$600, after paying labor hired and the interest on his capital.

Mr. PARKER, of Sudbury, formerly president of the Middlesex Agricultural Society, said, when he was a boy he thought farming was not good enough for him, and he engaged in trade. He lost his health in this business, and he bought a poor farm because it was in his way. He gave \$2,000 for it. The former owner had cut but two tons of hay on it, and this made the cattle shed tears to eat it. Now he cuts forty tons, besides the grain and other produce. It may be made to cut 100 tons. The land cost 17 dollars per acre; a

number of the acres would now bring \$100 each. There were two acres of bog on the farm, which he offered to sell for \$25. Finding no purchaser, he employed two Irishmen to drain it, which they did thoroughly in a day. He found the bog to be composed of peat, and since that time, he had cut and used in his paper factory 200 cords of this peat, by which he made a saving of five hundred dollars in fuel. It cost only a dollar a cord to cut and dry the peat. He thought farmers did not work as hard as mechanics and manufacturers. Some will sit still all winter and leave their wood uncut for summer, and are then obliged to quit haying to *make the pot boil*. Money could be made by farming, if farms were attended to.

Mr. BROOKS, of Princeton, said his experience in farming was similar to that of Mr. Parker. He went on his farm about twenty years ago, at which time he could only winter six head of cattle. He now winters thirty head of cattle, two horses, and two colts, from the products of the same land.

Mr. WHEELER offered a resolution in regard to introducing instruction in the science of agriculture into colleges and seminaries of learning.

Hon. B. V. FRENCH, of Braintree, agreed that we wanted more knowledge on agriculture, but he doubted whether we could obtain it from *professors*. Instructors must be practical men. A pattern or experimental farm, where boys could get an education, and also a practical knowledge of farming, would be useful. By

properly dividing their time, they might enjoy more health and gain more knowledge than they now do, when books only are the means of information. Students who are conversant with nothing but books, become feeble and emaciated. The lads in the city who have nothing to do but to acquire lessons from books, are outdone by young men who are bred in the country, and are used to a more active life. No profession required so sound a head as farming. As to profits, it was difficult to form an accurate estimate. So far as the land was made better, it was rather a matter of opinion. People estimate improvements differently. Many of the calculations of annual profits, too, are vague and unsatisfactory. Some of his own neighbors, who had done no other business through life, and had but very little to begin with, had accumulated pretty good fortunes; that is, say \$15,000 each. They are now quite advanced in years, have been moderate workers, and have lived prudently.

Mr. JENKS, of Boston, thought the importance of a proper education, as bearing on the success of farming, could not be too highly estimated. The difference between those mechanics who come here from Europe with a proper education, and others, is great. He thought the great improvement which has been made in plows, was the result of scientific investigation. He had heard of a man who made a profit by farming with the aid of books alone, without any practical education. He was guided by science only.

THE FARMER'S NOTE BOOK.

HALL'S BRICK MACHINE.—I observe in the March number of the Cultivator, page 97, under the head of Hall's Brick Machine, you quote the following:—"With the power of one horse and two men, [with two boys carrying off,] from 6,000 to 10,000 brick can be produced in a day."

No brickmaker north of New Jersey would want a machine, or ever trouble himself about one that would produce but 6,000 brick per day; and as statements relating to new inventions are supposed to rate them generally at their greatest capability, the quotation is calculated (especially at the north,) to prevent the sale of my machines, except in such places as they are known.

There was not far from two hundred millions of brick made last summer in the United States with my machines. Near one hundred millions of these were made on the Hudson river; twenty-five millions were made at the single town of Coxsackie. My machines are now in use in most of the states, and I know of no place where less than 8,000 bricks are produced regularly every day, but at the south with slave labor, the brick being very large, and five brick made at each impression, instead of six of the smaller brick at the north, it is necessary to add a third off bearer. I know of no place north of New Jersey where less than 10,000 brick are produced regularly per day with one machine, and in some cases the regular day's work is 13,000. The greatest number made daily last season with one machine, was 15,000, and I understand the same man who moulded them has entered into contract to mould the same number daily this summer. I have frequently known of 10,000 being made (with four hands and one horse,) in six hours, and 3,000 in one hour. But what brickmakers want to know, or that which it is most satisfactory to know, is the number that can be made in a season, as men ordinarily work.

The number moulded by one man during the season, (five months,) on the Hudson river, was from twelve to fourteen hundred thousand. I will refer you to the statements made by practical brickmakers and published in the Farmer and Mechanic, Jan. 1st. These statements were made, (such as were made to me) mostly in letters of business, unasked for, and they may be relied upon as correct. You will much oblige me to notice the foregoing facts in your next number of the Cultivator. ALFRED HALL. Perth Amboy, N. J., May 16, 1847.

RELATIVE PROFITS OF WHEAT AND INDIAN CORN.—It is the opinion of the best informed farmers, that the average yield of wheat in the counties of Seneca and Cayuga, for several years past, has not exceeded thirteen to fifteen bushels per acre. It will be less this year, from present appearances. The whole expense of raising wheat, may be put at \$13 per acre. Wheat at \$1 per bushel, gives but a poor return to the farmer for his labor and investment.

There has been a prevailing opinion throughout this section of country, that the raising of Indian corn, was more expensive, and yielding a less remuneration, than wheat. But I am satisfied from the little experience I have had, that the cultivation of corn will give a better return for the labor and expense than wheat. For, on making a calculation attending the expenses of raising corn, I have found it to be about \$10 per acre. If only 30 bushels are raised to the acre, which would be considered generally an indifferent yield, and the market price, say 50 cents per bushel, which is and has been the average price here, and wheat at \$1 per bushel, it will be seen at once which yields the most profit to the farmer.

I am aware that the falling off in the yield of wheat has been uncommonly great from what it was 25 to 30 years since, owing in a great degree to the manner

adopted by our farmers generally, in not cultivating the lands as they ought; having been under the fatal impression that the soil could not be exhausted, from its former virgin fertility. Shallow plowing, and exhausting crops, without giving back a return to the lands,—in other words, taking all and returning nothing that ought to have been, has been too much the prevailing error. There are some exceptions to this rule, and where there are such the return has been in proportion. J. O. D.

LIEBIG'S SYSTEM OF MANURING.—In the Cultivator for December, 1845, is an account of a *patent manure* which had been invented by Prof. LIEBIG. This composition was very highly recommended by Prof. L., and several associations were formed for the purpose of manufacturing it for sale. It was said that a company in England proposed to engage largely in the business. From the confident manner in which the distinguished chemist recommended this manure, great expectations were created in regard to it. The article in the Cultivator, before referred to, was originally, it appears, sent as a communication to the *Agricultural Magazine*, London. In this communication, Prof. L. intimates that by the use of this composition, "*agriculture will be placed on as certain principles as well arranged manufactories.*" He supposes, also, that "manufactories of manure will be established in which the farmer can obtain the most efficacious manure for all varieties of soils and plants," and that by the proper manufacture and use of the compound, "a new era will arrive in practical farming,"—that "instead of the uncertainty of mere empiricism, the operations of agriculture will be carried on with certainty, and instead of waiting the results of our labors with anxiety and doubt, our minds will be filled with patience and confidence."

I have been able, however, to obtain but little information in regard to the actual application and operation of this manure, either in England or elsewhere, though I have all along been anxious to learn something of its results. But in the April number of the *Farmers' Magazine*, I met with a letter in reference to this subject, from Dr. W. WEISSENBORN, of Weimar, dated March 1, 1847.

The letter of Dr. W. comprises a pretty free discussion of Liebig's theories in relation to agriculture, some of which he does not hesitate to say "we know by experience to be false." Among those theories he mentions particularly that which denies the necessity of adding carbon to the soil, than which, he thinks "nothing can be more absurd." Liebig, as is well known, holds that plants may derive their supplies of carbon wholly from the atmosphere—the atmosphere containing, to use his language, "an inexhaustible supply of that sort of plant-food." But Dr. W. observes, that "plants are fixed to the soil, and deprived of locomotion. Could they soar on high, like birds, one might perhaps in fairness, bid them go in search of carbon through the atmosphere."

But I do not propose to enlarge at length on that part of Dr. W.'s letter which refers to theories, but would merely offer an abstract of the results of some experiments, which he states were made with a view of testing the value of Liebig's patent manure.

Experiment 1.—Soil a deep rich loam, containing a good proportion of lime, and having a warm south-eastern exposure. The crop grown on it in 1844, was beets, that of 1845 summer-celza, (a plant of the cabbage tribe, similar to rape.) On the 26th of April, 1846, one-half of the lot, (A,) measuring one-twelfth of a Prussian acre, was top-dressed with 20 lbs. of Liebig's patent manure, for grain crops, and then sown with 5½ lbs. of barley. The other half, (B,) was not manured at all, but sown with the same quantity of the same kind of barley. The weather was favorable, and the barley grew well; but not the least difference could

be discovered between the two lots. The crop was cut on the 8th and housed on the 11th August.

The manured portion, (A,) yielded 23 sheaves, weighing 222½ lbs., and containing 92 lbs. of grain, 103½ lbs. straw, and 26 7-12 lbs. of chaff, and other refuse matter.

From B, there were harvested 22 sheaves, weighing 234½ lbs., containing 95½ lbs. of grain, 108 8-15 lbs. of straw, and 30 12-15 lbs. of chaff and other refuse matter. Liebig's manure had not, therefore benefitted the crop at all. On the contrary, the land that had not been manured, gave a somewhat better return.

Experiment 2.—It was made on an area of 18 Prussian square ruten, (1 rute = 12 feet;) soil and aspect as in the first experiment. In 1845 the field had yielded a crop of winter wheat. In 1846,

A.—Six square ruten were manured with 18 lbs. of Liebig's patent manure, for leguminous plants. By mistake, 18 lbs. were employed instead of 9 lbs., which would have been the proper quantity for that area, according to the instructions given by the firm of Messrs. Pfeiffer, Schwarzenberg & Co., of Hesse-Cassel:

B.—Six square ruten were manured with stable dung.

C.—Six square ruten were left without manure.

On the 4th of March, the area was sown with 7½ lbs. of vetches. The vegetation presented no difference on A and C; but was more luxuriant on B. The crop consisted, on A, of 63 lbs., viz: 15½ lbs. of grain, 47½ lbs. of straw; on B, 68½ lbs., viz., 18½ lbs. of grain, 50 lbs. of straw; on C, 63½ lbs., viz: 15 lbs. grain, 48½ lbs. straw. The grains from A, B, and C, present no difference as to their size and specific gravity; therefore Liebig's manure did not benefit the vetches.

Experiment 3.—On poor mountain-land there were sown with vetches:—A, (6 square ruten,) manured after Liebig's system; B, (6 square ruten,) manured with stable dung; C, (6 square ruten,) without manure. The vegetation on A and C presented no difference whatever; on B, it was considerably more luxuriant.

I submit these statements without comment, being only anxious that the public should arrive at MATTER-OF-FACT. Troy, June, 1847.

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RESULTS OF INDUSTRY.—[The following furnishes a good example of what may be accomplished in farming by laborious industry and perseverance. There are probably many such in our country, and it is proper that they should be held up for the encouragement of others. The writer of this article, it should be remembered, is located in a region which many look upon as very unfavorable to agriculture.—Eds.]

I commenced clearing land from a wilderness estate in 1820; the growth was heavy hard wood of beech, maple, birch, with some hemlock and spruce. I felled but little each year, at first, as I had neither ox, horse, or man, to help me, unless I hired or exchanged my own labor for them; (the latter I often did.) I practiced clearing every movable thing from the land, sowing it with some kind of grain and grass seed. It scarcely ever failed to produce a good crop of grain, and afterwards grass in abundance, for ten, and sometimes for fifteen years. I have cleared, with the assistance of my own sons, principally, about one hundred acres of woodland. I have about twenty-eight acres well cleared of stones, which is in a good state of cultivation. My stock consists of oxen, cows, and young stock, to the number of twenty to twenty-five, one horse, and about forty sheep. I have plenty of hay for my stock, and sell from five to ten tons yearly. My barn, previous to 1846, was 40 by 50 feet, standing where the ground sloped to the southwest, about four feet in fifty. In 1846 I built an addition on the lower side of the old part, one hundred and two feet long and thirty wide. I

have dug a cellar under the old part seven feet deep—dug a trench still deeper for drain under the wall, which is substantially built under the two sides and upper end of the old part, leaving the lower end immediately connected with the space or cellar under the new one, which is from six to ten feet deep,—without a single post to interfere with carting,—as the floor over it, with its contents, is supported by king posts. My cattle are watered under the new barn from a well. Young stock is fed at racks under the barn. The cattle are chiefly tied over the cellar of the old barn, and are kept abundantly littered with straw, &c. The manure is thrown into the cellar through a scuttle. JOHN MCGLAUFLIN. *Charlotte, Maine, March, 1847.*

GOOD MANAGEMENT.—Should some young and inexperienced farmer, with small means to commence business, be benefitted by this brief sketch from my pen, my highest object will be attained.

About ten years ago, I purchased fifty acres of land—forty improved, ten woodland—for which I paid \$41 per acre. I had, by prudence and industry, laid up \$500, which was all I was able to pay down. For the remainder I was in debt, and when I looked around on the old shattered buildings, and the rotten old fences, the prospect to a young, inexperienced farmer, just starting in life, was somewhat discouraging. I was determined, however, to have some *rules* and *regulations* about the matter. I soon became a reader of the *Cultivator*, from which I learned some very useful lessons, and I determined I would stick to the old maxim—

“A little farm well tilled.”

For the first four years of the above ten, I hired one man for about seven months per year; for the last six years, one man from eight and a half to nine months per year. This is all the help I have hired. One pair of horses has performed all my team work, and they have been fat winter and summer.

I have raised all kinds of grain except winter wheat. I will not occupy room in giving my experience in regard to cultivating all these crops, but will briefly describe an experiment I made in cultivating Indian corn.

I selected a piece of ground containing seven-eighths of an acre, cleared off all the stones, and spread on the surface 25 loads of coarse manure, which was turned under with the sward, about three inches deep. After plowing, I spread about twelve loads of pulverized manure on the surface. The strongest of this was night-soil, the next hog manure. I harrowed it thoroughly, and planted it to eight-rowed yellow corn—rows three feet apart each way; hoed it three times. Perhaps I ought to state that I planted every hill of this corn myself, about the 6th of May. I was very particular in the work, so much so, that my hired man called me a “book farmer.” However, I was proud of the name. In hoeing, I avoided the old fashioned way of hilling ten or twelve inches high, and kept the ground nearly level, well stirred and loosened.

In harvesting my corn it was measured in a bushel basket, every basket making, if shelled, a plump half bushel. I had 152½ bushels of ears, equal to 76½ bush. of shelled corn—or at the rate of 85½ bushels per acre. The corn, at 68 cents per bushel, amounted to \$51.85.

The corn-fodder was worth \$3, and the pumpkins grown on the lot \$2,—making the whole produce of the seven-eighths of an acre, \$56.85. The cost of cultivation was \$16, leaving \$40.85 clear profit.

The following spring I plowed this piece of ground some two inches deeper than when it was plowed for corn, and sowed it to spring wheat, soaked in brine, and well rolled in lime. I had 22 bushels of the first quality, worth \$1.50 per bushel, and which afforded me a clear profit of \$28. The same piece was seeded to clover and timothy, and the third year from the time it

was broken up, gave two tons of good hay, worth \$8 per ton. Calling the cost of cutting, &c., \$4, the clear profit from the hay was \$12. Thus, seven-eighths of an acre gave a clear profit in three years, of \$80.85, or \$90.95 per acre.

I will give the product of ten cows for the last season. I commenced with eleven, but one by accident was rendered unfit for the dairy, and was slaughtered. My cows are not yet arranged to my mind, yet I have five which I value at \$50 each—the remainder not more than \$30 each. I sold from the ten cows 4,087 lbs. of cheese, and 812 lbs. of butter. Our family consists of four to five persons the year round. We used 220 lbs. cheese, and by estimation, 188 lbs. butter—making the whole quantity produced by the cows, 4,300 lbs. cheese, and 1000 lbs. butter. The cheese was sent to Boston, by a merchant of our town, and brought us over \$6 per hundred. Our butter for the past ten years, has been sold mostly at New Lebanon Springs. As to quality, those who purchase it can answer for this.

In my course of farming I have made no expenditures except such as I have been able to make from the produce of the farm. I have expended \$3,400 for land, about \$1,500 for buildings, to say nothing of increase of stock, farming implements, fences, blind ditches, under-drains, &c. H. MATTISON. *New Lebanon, May 20, 1847.*

CANADA THISTLE.—I will describe my mode of destroying the Canada thistle. It is one of the most troublesome plants that infest our soil, particularly in grain fields, where they must be worked with the hands of the laborer. We have resorted to various methods to destroy them, and have ascertained that by cutting them as close to the ground as we can with a scythe, in June, or while they are in fresh bloom, and the stalk hollow, will surely kill them. We sometimes have to cut them two successive years. I prefer cutting just before a rain, so that the water may get in the hollow of the stalk which will rot it. I will here state, for the benefit of the readers of the *Cultivator*, (for I calculate you are all farmers,) that I have had on my farm a great many Canada thistles, and when I have cut them as here stated, it has entirely destroyed them. I. W. CURRY. *So. Trenton, Oneida Co., 1847.*

BOG LAND.—I have a large body of low land, as black as charcoal, mixed with white sand, and a rooty fibrous matter, resembling peat. In some places, there is so much of the latter article, that in very dry weather, if fire is put to it, it will burn to ashes. It looks immensely rich, and as if it ought to be very productive. Yet, however dry and well drained, it will produce nothing but sorrel, and that of the rankest growth I have ever seen. Indian corn grows very well upon it, and looks well until it is about two months old, and then, when about two feet high, turns yellow, burns up, and comes to nothing. Have you any such land in your region of country? Do you know anything of its nature and character? Have the owners of it ever reclaimed it and made it productive, and by what means did they accomplish it? and why is it so unprofitable? or can you inform me what to do with it? A reply through the next number of the *Cultivator* will greatly oblige your subscriber, JNO. COOKS. *Aetna P. O., Hanover Co., Va., March 17, 1847.*

[We are inclined to believe that the failure of crops above spoken of, is chiefly attributable to two causes, viz., the want of proper mineral elements in the soil, and the ungenial nature of the peat with which the roots of the plants are brought in contact. It is often the case, in similar soils, that only a few inches of the top—that which is decomposed by the air—becomes suited to the growth of cultivated plants, while the remainder lies a sour and inert mass. Crops on such

soils, sometimes grow well till the roots reach the undecomposed peat, which they will not penetrate to any extent; but on examination will be found matted together at the bottom of the loose surface soil.

To remedy the difficulty complained of, we would recommend that the soil, (it having been properly drained,) be first plowed to a good depth—eight to ten inches. This might be done in autumn, or fall. In the course of the winter spread on two to three inches of gravel or loam. When the soil is in suitable condition to work, let this be well harrowed in, and afterwards more thoroughly mixed by plowing—running the plow rather shallow at first, and going deeper at succeeding plowings. After this, a slight dressing of wood ashes or marl applied to the surface, will be found useful. We have seen the heaviest crops of Indian corn and grass produced on such lands, by this, or a similar management.—Eds.]

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PUTTING UP GARDEN AND FLOWER SEEDS.—A correspondent with the signature of "N," who dates from Bedford County, Va., gives us some observations in regard to the disappointments which are frequently experienced by seeds not vegetating. He suggests as a remedy against the evil, that each paper be labelled in a particular manner, as a form for which he gives the following:

"Early York Cabbage, grown by (or sold by) David Landreth. Jan. 1, 1847. Good for 5 years," (or as the case may be.)

He observes—"Now, don't you readily perceive the force of this endorsement? Not one person in ten in the country, are at all conversant with the germinating properties of the various seeds. Those who put them up know how long they will remain good; then why not reveal it to their customers? They certainly don't wish to sell a shadow for substance, or commit a fraud. I sincerely hope that some such mode as the one above suggested, will be forthwith adopted, and hope you will loudly call the attention of dealers to this subject. We certainly want something of this sort."

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SINGULAR SWARM OF INSECTS.—A neighbor, a physician, and likely to be accurate, sometime in the course of last summer, saw what he supposed to be a swarm of bees, clustered on a limb of an aspen tree, near his dwelling. He sent for a hand to hive them; but lo, on approach, they proved to be a swarm of *tumble-bugs*! When a window near the cluster was opened, the whole room was filled with the peculiar odor of the beetle. This was at evening—in the morning they were gone—my friend having no desire to house them. The cock-chaffer, or Dorr, *Scarabæus vorax*, is said by Rees to be "found in swarms, sitting on the hedges;" but I am not aware that the tumble-bug generally swarms. W. F. BRAND. Davidsonville, Anne Arundel Co., Md., April 16, '47.

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LARGE HOGS.—I send you the weight of six hogs killed in this town in the month of December last, with their ages at the time they were slaughtered. The breed is without a name, but is probably the result of several crosses of native breeds; they are usually white.

Chester Nye, one hog, age 22 mos., weight 636 lbs.	
Solomon Abel, " " 21 " " 591 "	
Septimus Loomer, " " 21 " " 593 "	
George Wright, " " 16 " " 550 "	
Samuel F. West, " " 21 " " 518 "	
" " " 21 " " 660 "	

Whole weight, 3,548 lbs.

Average weight, 591½ lbs.

I believe that there were about twenty hogs slaugh-

tered in this town last fall and winter, which weighed over 500 lbs., and also the same number of pigs that weighed over 300 lbs. each, some weighing near 400 at eight and nine months old. JOHN S. YEOMANS. Columbia, Ct., April 24, 1847.

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CUTTING BUSHES.—I noticed, several years since, a communication stating that the best time for cutting bushes, (grubs,) was when the leaves had become fully expanded. It struck my attention, as I recollected, in a leisure hour, to have cut or beat down the bushes on a small spot, and they were almost all killed. I have since cut bushes when the leaves had become fully expanded, or as soon as they had commenced growing most vigorously, and fully agree with the writer, that one cutting at this time is worth four at any other time in the season. The sprouts, if any, will be feeble, and may easily be killed by close pasturing with sheep. The sap flows freely at this time from the stumps, (stubs,) and exhausts the root of its vitality. Be careful to cut all the sprouts from the root. R. WATKINS. Napoleon, Michigan.

AGRICULTURE IN WISCONSIN.—For some time past I have contemplated writing you a few lines from this beautiful and enterprising territory; but have delayed, hoping to hear from some of our Wisconsin farmers, who are more directly interested in the subject of agriculture than I am. We have a delightful climate, a rich and fertile soil, containing more feet of rich vegetable mould than the New England states on an average can boast of inches, every natural advantage possessed by any country, and with a *good Constitution*, (which we hope ere long to have,) good laws enacted, and good citizens, which are flocking here by thousands, Wisconsin will soon become one of the most desirable sections of this Union. I am not a farmer, but if there is any period to which I look forward with pleasure and anxiety, it is to that, when I may be actively employed in agricultural pursuits, believing that no avocation in life is more honorable, more noble, or more conducive to one's happiness than that of the farmer's; and I am happy in the belief that the day has passed when "contempt is cast upon the husbandman."

Agriculture as a science is rapidly becoming more important, and attracting the attention of our best and most enlightened citizens. It is the noblest, for it is the "natural" employment of man. The intelligent and independent farmer is ever respected; he holds an important and responsible place in society. Upon him devolve many duties; upon him rest many obligations. Living not in the hum and bustle of human cities, where he would be continually in the whirlpool of political and other excitement, he can examine questions of a moral, political, and religious nature, with a cool head, calm mind, and an unbiased judgment. To him community generally looks for correct opinion, and in him they usually find a safe counsellor, and a correct adviser. Would that *all* of our farmers could be induced to cultivate their *minds* and hearts as well as their acres. They can reap as rich rewards in the mental as they can gain profitable crops in the natural world. Without learning it is impossible for a man to be a first rate farmer. Without intelligence he cannot discharge in a proper manner the duties devolving upon him as a citizen. Agriculture is a science that requires great experience and study. Men must be educated to be farmers, as well as lawyers, doctors, or divines. And there are thousands of young men, even in our midst, (we have 84 lawyers,) who are in stores and offices, who ought to engage in agricultural pursuits. It would be better for them—better for this territory, and better for the country at large: And who among the number would not rather be an *independent* farmer than a petty shop-keeper, or a fourth-rate lawyer. Who would

not rather be first in the noblest of all pursuits, than to be least in one which the world calls honorable? Let young men seek for our rich Wisconsin lands rather than for situations in stores, offices, or in what the world falsely calls the learned professions.

A few words as to the circulation of the *Cultivator*, which is rapidly gaining favor, especially with those who have been acquainted with it for the last year or two, and is now read with much interest by many of the merchants and professional men of our city. J. A. H. *Milwaukee, Wisconsin, April 10, 1847.*

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ROTATION—USE OF MUCK—LIME.—I thought a little sketch of our manner of farming might interest you. We go on the five year system; beginning with corn, or buckwheat, next oats, third wheat or rye; then seeded with timothy or clover two years. Some haul out their manure in the spring, unfermented, for corn, and some let it lay until fall and put it where they wish to plant the following year; while others heap it up in June, and put it where they sow winter grain. Corn yields about thirty bushels to the acre. Oats about the same, and rye and wheat about fifteen; although a great many crops exceed those rates, as we had last year in this neighborhood, some oats that yielded seventy bushels to the acre. In the fall of 1842, I hauled out some muck and bedded my barn-yard with it. The next June I heaped it with the manure which I made that winter, and in the fall of 1843, I put it where I sowed my wheat, and when I came to harvest it, I found a clean bright straw, well loaded. I pursued the same course in 1844, also, and with the same result.

I commenced using lime in the fall of 1844, spreading it on my ground after it was plowed the last time, just before sowing. I could not see any difference in the crop on that which was limed and that which was not. In the spring following, I put some lime on my sward, (about the same rate as above,) say one hundred and fifty bushels the acre, and planted it to corn, without any visible effect, and the next year to oats, when the limed ground was very easily distinguished by its rankness and greenness, even until harvest. The soil on which the above experiment was tried, is gravelly. My lime I burned myself. It was not the finest kind.

I think many mistake the worth of muck by hauling it out and plowing it under too soon. I have confidence in lime and muck, and especially in the latter, for my gravelly ground. Lime, I think, is very slow to act. PHILIP D. COOKINGHAM. *Pleasant Plains, Dutchess Co., N. Y.*

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BREAST PLOWING.—I am very much inclined to believe that the use of the breast plow might be beneficially applied in this country; more especially where the couch grass is so prevalent. There is no weed so injurious to the soil, or more impoverishing, and it chokes out almost every thing else sown upon the land; but when once it is banished may be easily kept clean. I have seen, in many instances, whole farms completely matted with it, the land bound together by this pernicious, clinging, stealing, creeper.

For instance, suppose a piece sown to wheat in the fall, with this ravenous plant stretching its roots in every direction, in search of the choicest food the land contains. It will not leave a spot unexplored, and the best food must be devoured by it. I know of no enemy that deserves a declaration of war so much as this. There is nothing on earth that more deserves death, and I know of no better instrument to accomplish this purpose than the breast-plow.

When the little wheat is cut, which may grow on land under such circumstances, put the breast plow in, and cut the sod off about an inch thick, with the stubble, grass, and roots turned over together. When sufficiently dry, put it in heaps and burn it, spread the ashes,

and plow with a very shallow furrow. Let it lay a short time, (say a fortnight,) and then cross-plow it, leaving it in that rough state the whole of the winter, which will give the frost a chance to kill the whole, and in the spring you will find the soil as mellow and friable as desirable. It will bear almost any proper crop that you choose to put upon it. The choice food which this worthless plant has been gathering together, is converted into food for other plants, and will quickly dissolve to feed the crop you wish to grow. I would advise every farmer to keep this dangerous enemy from his farm, for it consumes more of his substance than he is aware of. WM. H. SOTHAM. *Albany, June 4, 1847.*

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CHALLENGE IN REFERENCE TO "BLACK HAWK."—Our attention was called by a friend, a day or two since, to the advertisement in your May number, headed "*Vermont against the World.*" The conditions of that challenge are such that I presume the Messrs. Hill do not expect to find a competitor on the day named; for the competitor is to be superior to *Black Hawk* in all the respects mentioned, or *Black Hawk* takes the prize. So far as we know, *Black Hawk* is "the best and most perfect broke [entire horse] in harness" in the world. He would therefore take the prize on this ground alone over any horse that might be offered, though inferior to his competitor in the other particulars. We presume no one will take the field against *Black Hawk* under such conditions.

We should be happy, however, to meet him with "*Sir Henry*," and would not object to going to New-York for the sake of comparison, provided any reasonable conditions can be agreed upon. We have been accustomed to consider the prime requisites in a stock horse to be—1st. *Superiority of form*, by which we mean those points which conduce to *action*, *strength*, and *endurance*, so symmetrically and perfectly combined as to sacrifice neither of these, and to result in the greatest *beauty*. This the horse himself must show. 2d. The power of transmitting this superiority to his offspring. This his stock must show. If the proprietors of *Black Hawk* are willing to submit the decision to such a test, we will not trouble them to go out of Vermont to find a competitor. To be sure, "*Sir Henry*" has won victories enough at the N. Y. State Fair, and a fourth triumph would be of no great consequence; so that, though we should prefer to meet *Black Hawk* here, at home, where people are more directly interested—say, for instance, at Montpelier, in October next, where the whole state will be represented—yet we will not object to any reasonable arrangements as to time and place. We hope to send you an engraving of *Sir Henry* before long. Very respectfully, LUCIUS SANDERSON & Co. *Burlington, Vt., May 21, 1847.*

P. S.—Perhaps the proprietors of *Black Hawk* would prefer to put the decision on the answer to the following question:—"Which is the best horse as a getter of roadsters?" If so, we would not object. L. S. & Co.

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AGRICULTURAL ADVANTAGES OF ILLINOIS.—The high prices in Europe affect the interests of the farmers this way favorably, but not to the extent, in proportion, other sections of the United States enjoy, owing to their greater facilities of transportation. However, we shall soon be more favored in that respect, for the Michigan and Mississippi canal will be in working order next spring, and two railroads are about being commenced, crossing the state, uniting the lakes and eastern states, with the Father of Waters. With these improvements, Illinois will at once so extend her cultivation as to give a surplus of ten to twelve millions bushels of wheat, more of Indian corn, and other products in proportion.

We look to the doings of the National Convention, to be held at Chicago, on the 5th of July next, for much

good in improving and extending navigation over our great lakes and great rivers, and in stimulating private enterprise in furtherance of railroads, canals, &c., especially over the western prairies, the beauties and riches (naturally) of which are so little known. Yet the immigration this way has vastly increased, annually, since 1843; and the present year will, probably, show greater than usual increase, as we are led to suppose the numbers flying from famine in Europe, will far exceed any previous year.

I have noticed with pleasure the movements making for extending the raising and keeping of sheep in North Carolina, Western Virginia, &c., and wish all success; and if the parties conduct the whole enterprise judiciously, and have patience and perseverance for three or four years, they will command success. I have found that at least three years are necessary for acclimating a flock in a country differing in climate, feed, surface, &c., from that where they were raised, so that the result is quite satisfactory. My flock, since the spring of 1844, when I began to keep sheep on these prairies, have done better than almost any other flock of which I have knowledge, (and there were many brought into northern Illinois about that period.) Yet they suffered considerably from the changes—many died—others lingered—fleeces were inferior, and they did not breed well. But these obstacles, I observed, decreased every year, and encouraged me to persevere, feeling assured as I did, that with such fields, and so extensive, of rich grass to range in, a surface so elevated, rolling, and dry, with far less rainy, vapory weather, than in the eastern states, there could be no doubt that when once the animals were acclimated, they would thrive here at least as well as elsewhere, and this season has proved I was not mistaken. for the sheep are in *admirable order* in ALL respects. Those bred here I think preferable to any driven in, however long the latter have been in the country. Up to this time, I have not known any of those diseases that make havoc with the sheep elsewhere, among the animals here.

There were many persons who began sheep keeping this way, within six years, but they soon gave up, and without a fair trial, because all was not at once satisfactory.

Wolves, though they were numerous when I entered upon sheep keeping, and for two years preyed extensively on my flock, especially on the lambs, have done me no harm since last May—now a year since. I attacked the "varmints" with poisons, by hunting them over the prairies and to their dens, giving them no rest, especially in the spring, the period of breeding, and the result is satisfactory. 'Tis true, they destroy animals within some few miles of my place, but with their peculiar cunning, they have learned my *boundaries*, and respect them.

With my experience now, were I about to gather a flock of sheep for these prairies, I would give preference to those raised here, even at much higher prices than those lately or just driven in. I deem the former cheaper, *intrinsically*, (of course other points equal,) at \$3 or \$4 per head, than the latter at \$1 to \$2—to say nothing of vexation and disappointment for three or four years, wearing upon one's temper.

There are several first rate farms for sale around me, beside two or three of my own, and at fair prices—each combining rich prairie timber enough, with streams and springs of pure water.

I shall take pleasure in giving all information in my power regarding this section of country, either by replying to letters, or personally, to those who may call upon me.

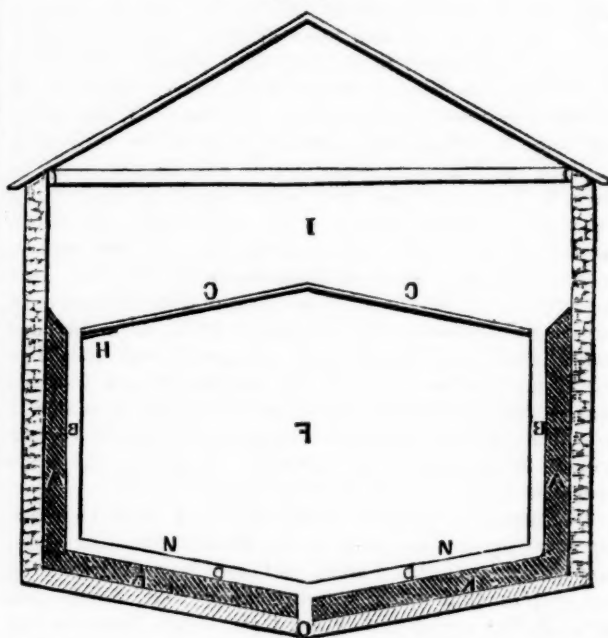
The population around me, say within a circle of twelve miles, has about doubled since 1843, made up

of good, honest, industrious settlers, generally from the middle and eastern states.

Taxes here are about 40 per cent. *less* than in Wisconsin. I state thus much unhesitatingly, for I have compared the taxes by visiting that territory.

The prairies are covered with fresh grass, and look like a vast emerald, dotted with numerous flowers.

By the way, I would state that I have laid out an extensive orchard of various fruits, and have planted last and present season some 600 trees—say, apples, pears, cherries, peaches, plums, &c., &c. Generally, they thrive well—especially the apples. JOHN SHILLABER. Dixon, Ill., May 25, 1847.



KEPHART'S PATENT FRUIT AND VEGETABLE PRESERVER.—The outer columns in the above cut, represent walls of stone, enclosing the inner construction. The light shading at the bottom, descending to the centre, represents the earth. The dark shadings, *A. A.* and *K. K.*, represent two boardings, with from six to ten inches space, and this space filled with a substance that will exclude heat. *F.* is the fruit room, in which articles are to be placed for preservation. *C. C.*, a floor, or cover, to the fruit room, made water tight, with a coat of pitch over its surface, to prevent moisture from penetrating. *I.*, an apartment to be filled with ice, supported by the floor *C. C.*, and designed to contain ice enough when filled, to last during the year. *B. B.* and *D. D.* are spaces around the fruit room, intended for the meltings of the ice on the top floor, to pass off. This ice water, as it passes down these spaces around the fruit room, and over the tight floor at bottom, in the space *D. D.*, serves to absorb any heat which may find its way through the non-conductor, *K. K. O.*, the outlet for ice water. *H.*, hatchway, or entrance into the fruit room. The fruit room, *F.*, is intended to be below ground, and the ice apartment, *I.*, if desired, can be above; buildings above ground being more generally preferred for ice to those below ground.

It will be seen from the construction, that the non-conducting substances, *A. A.* and *K. K.*, are designed to prevent the admission of heat from the earth at the sides and bottom, into the fruit room *F.*; while the ice upon the floor *C. C.*, acts by keeping the fruit room at a constant uniform temperature, and so cold as to exert a preserving influence upon articles placed therein.

As will be seen by the above drawing, its success depends entirely upon chemical truths. The room *F.*, in which fruits, &c., are placed for preservation, will remain the whole year at a constant, uniform tempera-

ture, so near the freezing point as to arrest the rotting as well as the ripening process of fruits, &c., without danger of freezing them. That the fruit room *F.* will remain at this temperature, will be evident from the fact that the air in contact with the floor *C. C.*, on which the ice rests, becomes nearly as cold as ice itself. This condensed air will immediately sink, while the air at the bottom of the room, if but half a degree warmer, will rise to the floor *C. C.* and give off its heat; thus maintaining a uniform temperature, corresponding with that in contact with the ice floor *C. C.*

Articles placed in the preserver remain as perfectly dry and free from moisture as if kept in the best ventilated apartments. The air, descending from the floor *C. C.*, being always half a degree colder than the boxes or barrels of fruit, &c., cannot deposit any moisture thereon, it being an established fact that no object can condense moisture unless colder than the atmosphere coming in contact with said object. It is a theory long established by chemistry, that a temperature, dry, uniform, and near 32° Fah., will arrest the process of decay that takes place in fruits, vegetables, &c., but never, until the above invention, could the truth of theory be tested. Two years of experiments prove the truth of the above theory, and establishes the entire utility and success of the invention, as fruits, foreign and domestic, viz., oranges, lemons, figs, apples, pears, peaches, plums, grapes, &c., as well as the most delicate fruits,—also potatoes, green corn, melons, &c., can be kept as long as desired. Add to these, butter, eggs, bacon, &c., can be kept through the entire year as fresh and sweet as when first put in the preserver. Fruits, in common temperatures, undergo saccharine fermentation, or what is known by the mellowing or ripening process, which is followed by vinous, ascetic, or putrefactive fermentation, which completely destroys the fruits. A temperature so low, arrests, and almost entirely prevents, the first process towards decay, so that all fruits kept in the preserver will retain all their juices, freshness, and flavor, as when plucked from the vine or tree. [See advertisement in this paper.] FLACK, THOMPSON & BROTHER. Spring Garden P. O., Philadelphia, Pa.

FARMING, AND CAUSES OF IMPROVEMENT IN NORTH CAROLINA.—How many plows do you run? How much land do you tend? are the usual questions asked when farming is the topic. The custom in this country, is to pitch a large crop, spread over a vast area of poor land, without calculating the labor. The consequence is, grass gets ahead, and hands are worked almost to death to keep it under, and when gathering time comes there is little to show for it. I confess that from the want of knowledge and experience, I was deluded this way myself. Last year I tended 25 acres less than usual, and found an advantage in the measure. My hands were less worried, for they kept ahead of the grass; they had more time to devote to their own affairs, my crop was better tended, and I made more corn than I did when I cultivated the omitted 25 acres.

I shall in future study to reduce, and not enlarge my plantation. The old Roman acted wisely. He had but a certain quantity of land under cultivation, and three sons. When one became of age, he gave him a fourth of his farm, and still made as much from what remained as before. When his second and third sons arrived at the same period, he gave each a fourth, retaining a fourth himself, and yet he made as much from the part retained, as when he cultivated the whole. Phocion, when found in a deep study, was asked what he was thinking about. "I am thinking," said he, "how I shall shorten what I have to say to the Athenians." As there is generally more substance in a short, than in a long and elaborate oration, so a little land well tended

and well manured, will produce much more and with less labor than a large tract badly tended and badly manured.

From my own observation, and what I hear from others, agricultural improvements are progressing in every part of our state,—in manuring, in raising stock, and in every branch and department of the calling,—all seems to be life and activity. I have asked myself the question, what can be the cause of all this? The answer is at hand—it is the improvement of mind, improved by reading on the subject of agriculture. Public attention in this state, was first awakened on this subject by Taylor's "Arator,"* followed by a little work by a native of this state. Next in the order of succession comes your own "Cultivator;" then the North Carolina Farmer, a respectable periodical of about two years standing. I have no doubt a perfect revolution will be produced in the course of a few years.

Before the publication of "Arator," farming was at its lowest ebb—farms were deserted—and there was a perfect rush to the west. The roads were filled with families in the most destitute condition. I well remember once having witnessed a spectacle which filled me with sadness. It was a man harnessed to a little cart loaded with four small children, a bed, and cooking utensils, while three children and the wife were walking by his side, all bound for the land of promise, the "far west." Emigration, thank God, has measurably declined. I have learned with regret, that a painting has been exhibiting in the rotunda of the Capitol, at Washington, in ridicule of North Carolina emigration, in which the poverty of the emigrants is made the subject of jest. I speak of this state of things not to excite mirth, but with sensations of sorrow; and he, in my opinion, has a bad heart who can look with complacency on, and make a jest of human suffering. J. D. J. Topsail, N. C., April, 1847.

PRESSING HAY.—There seems to prevail great inexperience among us of the south, as to the best, cheapest, and simplest mode of packing, pressing, or baling hay; or of constructing the apparatus on an effective and practicable plan. As our northern friends are more skilled and experienced in these useful matters, and as it is the province of your very useful and valuable paper to afford us knowledge in, and give us information on whatever appertains to the agricultural interest and advancement, we solicit you, through its pages, to acquaint us with the various methods by which our northern farmers perform with so much facility the work of packing their hay into bales. C. Z. WOOD. Craven Co., near Newberne, N. C., May 10, 1847.

"IRISH ROSE BUTTER."—I perceive that in the proposals issued some time since by the Navy Department, at Washington, for the supply of butter for the Navy, "Irish rose butter" is the standard to which applicants are required to conform. I have been somewhat acquainted with Irish butter, but this particular description I do not recollect to have seen. I have examined, somewhat extensively, English works, to ascertain the peculiarities of this butter, but can as yet find no account of it. I understand all the department expects is, butter which will stand a five years' voyage. This they obtain in one locality mainly. I wish to inquire through your paper, the process of making "Rose butter," if known, and I should like to know also whether all the butter from the state of New-York, which goes to the supply of the American Navy, is actually made in one county, which sends far less butter to market than many counties in this state; and is not butter, if

* "ARATOR": being a series of Agricultural Essays, Practical and Political; in sixty-one numbers: by Col. John Taylor, of Caroline county, Virginia. Baltimore, 1817."

of as good a quality in every respect, made in central and western New-York, as the state affords? J.

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WHEAT IN VIRGINIA.—Your correspondent, William Bacon, in the February number of the *Cultivator*, says, "The wheat crop is not abandoned because exposed to rust. Farmers have learned to manage the crop so as in a great measure, to avoid its influence." In this part of Virginia, the rust has caused great injury to the wheat crop every year but one since 1839; indeed, on some entire farms, and many fields which once produced fine wheat, the crop has of late years been destroyed, so as to not be worth cutting. If Mr. Bacon will instruct us how to prevent it, he will be a public benefactor. You will much oblige me by calling his attention to the subject. MICAJAH DAVIS, JR. *Lynchburgh, Va., March 13, 1847.*

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TO MEASURE HAY IN THE MOW OR STACK.—More than 20 years since, I copied the following method of measuring hay, from some publication, and having verified its general accuracy, I have both bought and sold hay by it, and believe it may be useful to many farmers, where the means of weighing are not at hand.

Multiply the length, breadth, and height into each other; and if the hay is somewhat settled, ten solid yards will make a ton. Clover will take from 11 to 12 yards for a ton. H. A. P.

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WOOL DEPOTS AND SHEEP.—In the July number of the *Cultivator* for 1845, I called the attention of wool-growers to the Depot, then about being established for the sale of wool, by H. BLANCHARD, at Kinderhook; which at that time was a matter of experiment, and had nothing practical to commend it to the notice of those concerned; but now, after a trial of two years, I feel justified in recommending it to the patronage of all who have wool to sell,—as a successful and beneficial operation; because I have been satisfied with the sale of my wool; because it has given general satisfaction; and because it is admitted by all with whom I have conversed on the subject, that the wool in this section has been sold higher than it would have been had there been no depot. My wool has sold for the last two years, for more per pound at the depot, than it did the three years previous, notwithstanding the market price has been from eight to ten cents lower. Wool at the depot is sold upon its merits, and brings all the manufacturer is willing to pay; because the agent knows its value, and understands the market as well as the buyer. Not so with the grower; he has no means of knowing its exact value; because he does not know how it will compare with the different sorts of the manufacturer. No two lots of wool will assort alike, and a man that is not conversant with the business, and has not had practice, is altogether incompetent to do it; and if he cannot assort wool well, and does not know the prices of the different sorts, he cannot be a close judge of its value; hence he is liable to be cheated, because the buyer knows its exact value, and when he has no competitor will seldom pay it. If he is a speculator, he buys low to make money; if an agent, to suit his employer. Another reason why wool-growers in this section should patronize the depot, is because there has been no competition for many years to any considerable extent; as one man has been the principal buyer in Columbia and Rensselaer counties in this state, and Berkshire in Massachusetts, and before the depot was established, if we did not sell to him we could not sell at all; why this is so I know not; but wool-growers generally believed there was a combination or understanding among the buyers, that each one should buy within an allotted territory, and that belief was one of the principal causes which led to the establishment of the depot

While writing, I wish to say a few words on the importance of greater improvements in flocks. I suppose two-thirds of the flocks in this section that do not have particular attention, do not, at the present low prices, produce more than about one dollar's worth of wool per head. Now I suppose with a trifling expense for better bucks, and with a little attention to the selection of the most unprofitable sheep, (which should be sold or killed,) any such flock in a short time, may be so improved as to enhance the value of the fleece twenty-five cents apiece, and in a short time more, another twenty-five cents may be added.

All we add to the value of the fleece, is profit, as a sheep that yields but two and one-half pounds, requires as much feed and more care than one that yields three and one-half pounds.

I have had the same stock of sheep for twenty years, and have improved them till they have averaged me for the last five years, from three pounds five to three pounds nine ounces per head, which sold at the depot for forty-four cents per pound, and the fifty cents per head I get more than the owner of an ordinary flock, comes of improvement. DANIEL S. CURTIS. *Canaan Centre, June 14, 1847.*

ANSWERS TO INQUIRIES.

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MACHINE FOR SOWING CLOVER SEED.—A SUBSCRIBER, Perinton, N. Y. The notice to which you refer in the *Genesee Farmer*, was taken from the *Franklin Repository*. The machine for sowing clover seed, was stated to be manufactured by RICHARD WOODS, Chambersburg, Pa., and the cost was said to be "about" three dollars. We have no other information in regard to it. There may be other machines designed for the same purpose, which will answer as well or better. If there are such we should be glad to hear of them.

OIL-CAKE FOR EWES.—A SUBSCRIBER. We have often known oil-cake fed in moderate quantities, to ewes before lambing, without any injurious effect; but with decided advantage. It may be given freely after the ewes have lambed, and will produce a large flow of milk.

MILLET SEED.—A SUBSCRIBER. We presume ground millet would be good horse-feed; but on account of the smallness of the seeds, we should not suppose it would be worth much for this purpose in its whole state.

HAND THRESHING MACHINE.—W. H. J., Smithfield, R. I. At the present time we do not know of any hand threshing machine in use.

MUCK FOR MANURE.—L. P., Proctorsville, Vt. We shall shortly furnish an article on the best mode of managing muck for manure. For the present, we can only say, mix it with unleached ashes, if they are to be had conveniently, at the rate of from one to three bushels per cart load. Let it lie in heap a month, if practicable, before it is used.

TRANSPLANTING AND GRAFTING HICKORY TREES.—The best mode of raising hickory or walnut trees, is by planting the seed in nurseries and transplanting them when four or five feet high. The nuts should be planted as soon as they fall from the tree, or be kept till put in the ground in such a situation that the kernel will not shrink. It is said in DOWNING'S "*Fruits and Fruit Trees*," that the different kinds of walnut may be grafted, "with due care, on the common hickory." If this has been successfully tried in this country, we should be glad to learn the particulars.

SHEEP KILLED BY DOGS.—W. R. Putnam, near Marietta, Ohio, had 50 sheep killed by Dogs; and Judge Richardson, of Auburn, N. Y., had more than 60 killed in one night.

AGRICULTURAL SOCIETIES.

N. Y. STATE AG. SOCIETY.—The Executive Committee met at Saratoga Springs, on the 3d of June, the President, GEO. VAIL, Esq., in the chair. The ground selected for the next Fair, was a field of twenty-three acres, a short distance from Congress Spring, opposite the old race course, easy of access from different parts of the village, and surrounded with public roads. This field, on one side of which is a beautiful grove, will be enclosed for the exhibition. Plans were submitted for the necessary buildings, and Mr. JOHNSON, the Secretary, and Dr. THOMPSON, of Cayuga, were appointed a committee to superintend the preparation and arrangement of the grounds and buildings, under whose direction such arrangements will be made, as cannot fail to give satisfaction to the thousands who will be present at the Fair. The Judges to award the prizes, were appointed, together with such committees as were deemed necessary to carry out all the arrangements for the ensuing exhibition. From the spirit thus far evinced by the citizens of Saratoga, there can be no doubt, but that the public will find on their arrival at this beautiful village, that everything has been done that was requisite for the comfort and convenience of visitors, and for a fine display of the articles presented by exhibitors.

A committee of arrangements was appointed on the part of the society, consisting of GEORGE VAIL, Pres't., Troy; B. P. JOHNSON, Albany; T. J. MARVIN, W. A. BEACH, J. T. BLANCHARD, J. A. COREY, Saratoga; SAMUEL CHEEVER, Bemis' Heights.

A committee of reception of strangers and guests of the society who may be in attendance, was appointed, consisting of Chancellor WALWORTH, Hon. JOHN A. KING, E. C. DELAVAN, Hon. SAMUEL YOUNG, J. A. COREY, G. M. DAVISON.

A copy of the Transactions of the Society for 1846, published by the legislature, was presented by the secretary, and he was directed to give notice to Presidents of county societies, that forty copies of the same for each society, bound, would be forwarded on application to him at the society's rooms—the expenses of box, packing, &c., \$1, being forwarded to him.

The PRESIDENT and Mr. MCINTYRE, were added to the committee on the removal of the remains of the late Judge BUEL; and the committee were instructed to take measures for the removal of the remains and monument to the lot selected at the cemetery, at the expense of the society.

The American Herd Book was added to the money premiums on Durham cattle.

After the reading of letters from gentlemen in different parts of the country, the acknowledgement of donations to the library, &c., the Board adjourned to the 2d Thursday of July, at the Society's Hall, Albany, at 10 A. M.

Those who intend to compete for premiums at Saratoga, should remember that all animals and articles must be ready for examination on the *first day* of the exhibition—that is, on the **FOURTEENTH OF SEPTEMBER**. The first day will be devoted exclusively to the examination by the judges, of the animals and articles exhibited, and *no persons* will be admitted within the enclosure on this day, but the officers of the Society, judges, and exhibitors.

ERIE COUNTY, N. Y.—The Cattle Show and Fair is to be held at Buffalo on the 22d and 23d days of September. The address will be delivered by O. ALLEN, Esq., President of the Society. There are seventeen classes

of premiums, embracing all descriptions of live stock, field crops, dairy produce, implements, fruits, &c.

SENECA COUNTY, N. Y.—Annual Exhibition to be held at Ovid, on the 14th and 15th of October. We have received a pamphlet containing the list of premiums, which are numerous and liberal. We notice a regulation in regard to the premium on Indian corn. The corn is to be weighed in the ear, and each bushel is to weigh not less than seventy-five pounds.

SARATOGA COUNTY, N. Y.—Show to be held at the village of Ballston Spa, on the 8th of September next. The premium list makes a highly respectable appearance. Fifty copies of the *Cultivator* are awarded in premiums, for which we return our thanks.

ONONDAGA COUNTY, N. Y.—We have received a copy of the premium list of this society, but are not informed at what time or at what place the annual exhibition will be held. We notice the society offers in premiums several copies of the *Cultivator*.

YATES COUNTY, N. Y.—Show and Fair to be held in Penn Yan, October 1st. A very extensive list of premiums is offered, embracing all branches of agriculture, horticulture, &c. The society has our thanks for its liberal patronage of the *Cultivator*, which it offers in premiums.

CORTLAND COUNTY, N. Y.—We have received a copy of the premium list of this society, but are not informed as to the time and place of holding the next show.

CALEDONIA COUNTY, VT.—Fair to be held at St. Johnsbury Plain, Oct. 7th. This society carries on its operations in a spirited manner, and its exhibitions and other visible results, prove that the course of improvement in this section is onward.

RUTLAND COUNTY, VT.—The show will be held at Rutland, on the 29th and 30th of September. The officers of the society are—Hon. FREDERICK BUTTON, President; WM. L. FARNHAM, of Poultney, Wm. R. SANFORD, of Orwell, Vice-Presidents; JOHN C. THRALL, of Rutland, Rec. Secretary; WM. C. KITTREDGE, of Fairhaven, Cor. Secretary; JAMES ADAMS, of Castleton, Treasurer; SAMUEL H. KELLOG, of Pittsford, Auditor.

WORCESTER COUNTY, MASS.—This society holds its Exhibition on the 23d of September next, at Worcester. The liberal premiums and the widely extended reputation of the society, will no doubt, as usual, bring crowds to the exhibition.

BOT FLY.—In the *Ohio Cultivator*, L. A. Baker says, that the bot-fly has "a bad, sneaking habit," which he has never seen noticed by any author. After buzzing about the horse's legs and mane a short time, it darts with great speed at the cavity beneath the jaws, and instantly inflicts a severe wound, from which the blood oozes; and that it is this occasional and painful attack, for which he has discovered no reason, that gives horses such a terror for these flies, which otherwise would not be noticed.

DURABILITY OF MANURE.—A writer in the *Farmer and Mechanic* states that he has noticed the bottoms of coal-pits, between 65 and 70 years after the burning, so fertile that they invariably bore heavy crops of grass or grain. This manure, it is known, consists of burnt earth, ashes, charcoal, &c. Common barn manure becomes nearly or wholly exhausted in a comparatively short period.



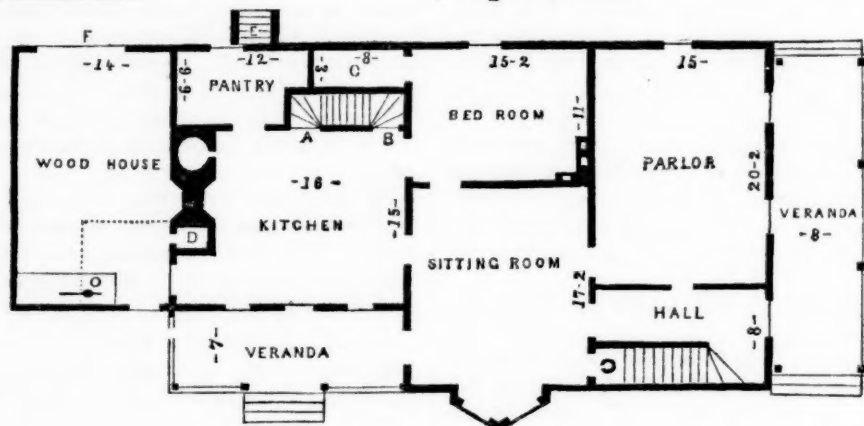
A COMMODIOUS FARM HOUSE.

EDS. CULTIVATOR—I herewith send you a plan and sketch of a commodious farm house. I have not endeavored, in planning this house, to get the greatest number of rooms in a certain space, or to have it most showy at a given expense, but to make it everywhere convenient, commodious, and tasteful.

The main house is thirty by thirty-two feet, two stories high, with a large well-lighted garret. The rear is 23 by 28 feet, including the wood house, and is a story and a half high. The first story is intended to be ten feet high, the second nine.

The kitchen is entered from without, either through the back veranda, or the wood-house, and is lighted by two windows looking out through the veranda. *A.* is the chamber stairway—*B.* the cellar do.—*D.* ash-bin—*E.* outside cellar stairs—*F.* large door for throwing in wood—*O.* cistern-pump, and platform. The dotted line in the wood-house represents the wall of the cistern.

On the second floor, fig. 48, *A.* is the principal stairway—*B.* bed-rooms—*C.* closets—*D.* is either a bed-room or lumber-room—*H.* H. halls—*O.* kitchen stairs—*G.* garret stairs.



Ground Floor.—Fig. 47.

By a glance at the plan, fig. 47, it will be seen that there is a veranda extending across the front of the house. Through this we enter the hall, which is lighted by a window over the door; at the left, as we enter, is the principal stairway; on the right, is the parlor—a large and well-shaped room, with two windows on one side, looking out through the veranda, and one at the end, looking in another direction. Proceeding through the hall, we enter the sitting-room, which is lighted by a bay window in the end, and a door-window opening into the back veranda. From this room are doors opening directly into the parlor, bed-room, and kitchen. The bed-room, with the clothes-press *C.*, is lighted by one window, and has a door opening into the kitchen.

It will be seen by the perspective view above given, that the house is intended to be built in the *bracketed* style. I adopted this style in preference to the rural gothic, not because I consider it more beautiful, but because it is less likely to be caricatured by ignorant mechanics, or fashionably ambitious imitators. There is now such a passion for gothic dwellings, that the country will soon be blotched with all kinds of gabled and rustic fantasies, and the style will be burlesqued to such an extravagant degree as to become odious. When displayed in *proper situations in the country*, the picturesque beauties of rural gothic dwellings are unrivalled. But to see such dwellings put on town lots, or in flat, bare fields, inspires the same aversion as would a bald

MANAGEMENT OF ROADS.

[THE common system of managing the repairs of roads, is by each individual giving a certain number of days' work on the highway, to balance a certain number of dollars assessed against him—giving to each person taxed the offer of commutation at a given rate. The work is generally conducted by supervisors, surveyors, or overseers, who are annually chosen by the different towns or townships. It is thought by many that this is not the best mode of supporting the repairs of roads, and a different one has been in some instances adopted, in lieu of it. Instead of personal service being rendered, the tax is paid in money, which is expended under the direction of agents chosen for the purpose. So far as this system has been tried, we believe it is generally acknowledged to be far better than the old custom. Mr. GILLESPIE, in his work on "ROAD MAKING," which we noticed last month, has an interesting chapter on this subject. He points out, in the first place, the defects of the present system, and then proceeds to lay down a plan which appears to possess many advantages. We recommend a portion of his remarks, which are herewith given, to the careful attention of all interested in the support of public roads.—Eds.]

In the first place, the condition of the roads, which is so important an element of the wealth and comfort of the whole community, should not be allowed to remain at the mercy of the indolence, or false economy, of the various small townships through which the roads pass. In one town, its public spirit, wealth, and pride, may induce it to make a good road; in the adjoining town, a short-sighted policy, looking only to private interest in its narrowest sense, may have led the inhabitants to work upon the roads barely enough to put them into such a condition as will allow a wagon to be slowly drawn over them.

In the next place, the "commissioners" who have the primitive direction of the improvements and repairs, should be liberally compensated for the time and attention which they give to the work. Gratuitous services are seldom efficient; at best they are temporary and local, and dependent on the whims, continued residence, and life of the party; and if the compensation be insufficient, the same evils exist, though in a less degree. Skill, labor, and time, cannot be obtained and secured without being adequately paid for.

The third defect in the system is the annual election of the commissioners and overseers. When men of suitable ability, knowledge, and experience have been once obtained, they should be permanently continued in office. On the present system of annual rotation, as soon as the overseer has learned something in his year's apprenticeship, his experience is lost, and another takes his place, and begins in his turn to take lessons in repairing roads at the expense of their condition. In other occupations, an apprenticeship of some years is thought necessary before a person is considered as qualified to practice with his own capital; while a road overseer, the moment that he is chosen, is thought fit to direct a work requiring much science, at the expense of the town's capital of time, labor, and money.

In the fourth place, the *fundamental principle* of the road-tax is a false one. Its contemporary custom of requiring rents to be paid in kind, has long since been found to be less easy and equitable than money rents. Just so is work paid for by the piece preferable in every respect to compulsory labor by the day. Men are now

taken from their peculiar occupations, in which they are skilful, and transferred to one of which they know nothing. A good plowman does not think himself necessarily competent to forge the coulter of his plow, or to put together its woodwork. He knows that it is truer economy for him to pay a mechanic for his services. But the laws assume him to be a skilful road-maker—a more difficult art than plow-making—and compel him to act as one; though his clumsiness in repairing his plow would injure only himself, while his road-blunders are injurious to the whole community. Skill in any art is only to be acquired by practical and successful experience, aided by the instructions of those who already possess it. An artisan cannot be extemporized.

Fifthly, labor by the day is always less profitable than that done by the piece, in which each man's skill and industry receive proportionate rewards. Working on the roads is generally made a half holiday by those who assemble at the summons of the overseer. Few of the men or horses do half a day's work, the remainder of their time being lost in idleness, and perhaps half of even the actual working time being wasted by its misdirection.

Lastly, it follows from the preceding, that the commutation system operates very unfairly and severely upon those who commute; for they pay the price of a full day's work, and their tax is therefore doubled.

Such are the principal defects of the present system of managing the labor expended on town roads. But it is much easier to discover and to expose, than to remove them. In the following plan the writer has endeavored to combine the most valuable features of the various European systems, and to adapt them to our peculiar institutions.

In each state, a general legislative act should establish all the details of construction, and determine definitely "What a road ought to be," in accordance with the theory and practice of the best engineers. Surveys should be made of all the leading roads, and plans and profiles of them prepared, so that it might be at once seen in what way their lines could be most efficiently and cheaply improved.

The personal labor and commutation system should be entirely abolished. If the town-meeting would vote a tax in money of *half* the amount now levied in days' work, its expenditure under the supervision to be presently described, would produce a result superior to the present one. When a road is a great thoroughfare, extending far beyond the town, it would be unjust to levy upon it all the expense; and a county tax, or in extreme cases, a state appropriation, should supply what might be necessary.

In regulating the expenditure of the money raised, the fundamental principle, dictated by the truest and most far-sighted economy, should be *to sacrifice a portion of the resources of the road to ensure the good employment of the remainder*. The justice of this principle needs no argument; its best mode of application is the only difficulty. The first step should be to place the repairs of the roads under the charge of a professional road-maker, of science and experience. On his skill will depend the condition of the roads, more than on local circumstances or expenditures. His qualifications should be tested by a competent board of examiners, if he should not have received special instructions in the requisite knowledge, such as might well form a peculiar

department of education in our colleges and normal schools. As each town by itself could not afford to employ a competent person, a number of them (more or less, according to their wealth and the importance of the roads within their bounds,) should unite in an association for that purpose.

The engineer thus appointed, should choose, in each township, an active, industrious man, of ordinary education, to act as his deputy in making the expenditures in that town, and as foreman of the laborers employed during the season of active labor on the roads. This deputy might be busily and profitably employed during the entire remainder of the year, in constantly passing over in due rotation the whole line of road under his care, and making, himself, the slight repairs which the continual wear and tear of the travel would render necessary. If taken in time, he himself could perform them; but if left unattended to, *as is usual*, till the season of general repairs, the deterioration would increase in a geometrical ratio, and perhaps cause an accident to a traveller, which would subject the town to damages tenfold the cost of repairs.

The laborers hired by the deputy in each town should be employed by piece work as far as is possible. This can be carried out to a great extent, when the superin-

tendent is competent to measure accurately the various descriptions of work, and to estimate their comparative difficulty. When the work cannot be properly executed by portions allotted to one man, it may be taken by gangs of four or five, who should form their own associations, make a common bargain, and divide the pay. In work not susceptible of definite calculation as to quantity or quality, and in such only, day-labor may be resorted to under a continual and vigilant superintendence.

In such a system as has been here sketched, the money tax would be found to be not only more equitable than the personal labor system, but even less burdensome. None of it would be wasted; and those who had skill and strength for road work would receive back, in wages, more than their share of it; those who were skilful in other work might remain at that which was most profitable to them, and pay only their simple share of the road-tax, not double, as when they now commute; and the only losers by the change would be the indolent, who were useless under the old system, but under this, would be obliged to contribute their share; while great gain in every way would ensue to the community at large. The subject urgently demands legislative attention.

CUTTING GRASS FOR HAY.

THE stage at which it is proper to cut grass for hay, undoubtedly varies with the different species. Some kinds, as the orchard grass, (*Dactylis glomerata*), and the common "spire grass," or Kentucky blue grass, (*Poa pratensis*), make only a small weight, comparatively, in culms or seed stalks, but in favorable soils throw up an abundance of long, rich leaves. Where a heavy growth of such grasses is produced, it is best to mow them twice or more in a season—the first time when they are in flower, (or sooner if they lodge down,) and at such times afterwards as they will afford a suitable burden. But if the land is not rich, there will be only a few seed-stalks, and it may in many cases be better to let them die and dry up, and permit the growth of the leaves to continue till the latter part of the season, or till a good crop is accumulated. It should be remembered however, that in all cases where there is a thick growth which lodges or falls down, it should at once be cut; otherwise the grass will spoil by fermentation, and the roots, also, will be more or less killed.

It is probable that timothy, the herds-grass of New England, (*Phleum pratense*), attains its maximum amount of nutriment at a later stage than most of the grasses commonly cultivated here. The common opinion is that its greatest value is at the time, or after, its seed is ripe. Our experience does not support this idea. We are aware that according to the experiments of SINCLAIR, as given in the *Hortus Gramineus Woburnensis*, the ripe stems of this grass afforded twice the amount of nutriment given by the same quantity taken in the flowering stage. This statement has probably had great influence in the minds of farmers in regard to the subject. But further researches in chemistry, have shown that the experiments of SINCLAIR are not to be relied on for accuracy. His process was described in the work just referred to, page 2, as follows:

"The grass, in a green or dry state, is submitted to the action of hot water till all its soluble parts are taken up. The liquor is then separated from the woody fibre by means of blotting paper; it is then evaporated to dryness. The product, or solid matter, is the nutritive matter of the grass."

In relation to the experiments of SINCLAIR, Prof. JOHNSTON, in his lectures, remarks that they have lost much of their value since it has been satisfactorily ascertained—

"1. That the proportion of soluble matter yielded by any species of grass, when made into hay, varies not only with the age of the grass when cut, but with the soil, the climate, the season, the rapidity of growth, the variety of seed sown, and with many other circumstances which are susceptible of constant variation.

"2. That the animals have the power of digesting a greater or less portion of their food which is insoluble in water. Even the woody fibre of the hay is not entirely useless as an article of nourishment—experiment having shown that the manure often contains less of this insoluble matter than was present in the food consumed.

"3. That some of the substances which are of the greatest importance in the nutrition of animals—such as vegetable fibrin, albumen, casein, and legumin—are either wholly insoluble in water, or are more or less perfectly coagulated and rendered insoluble by boiling water. Mr. Sinclair, therefore, must have left behind, among the insoluble parts of his hay, the greater proportion of these important substances. Hence the nature and weight of the dry extracts he obtained could not fairly represent either the kind or quantity of the nutritive matters which the hay was likely to yield when introduced into the stomach of an animal."

It is evident that even Mr. SINCLAIR himself was by no means confident as to the correctness of his deductions, for in relation to the soluble matter of the grasses being taken as denoting accurately their value, he quotes from Sir HUMPHREY DAVY, as follows:—"But still these quantities [of soluble matter,] cannot be regarded as *absolutely* denoting their value; albuminous or glutinous matters have the characters of animal substances: sugar is more nourishing and extractive less nourishing than any other principle composed of carbon, hydrogen, and oxygen; certain combinations of these substances, likewise, may be more nourishing than others."

Upon the whole, therefore, though we should be in

favor of allowing timothy to come nearer to maturity than most other kinds of grass, we would cut it for hay before much of its seed is ripened.

The stems of timothy, where the growth is rank, are generally stiff and coarse, and the hay is frequently too hard and wiry to be greatly relished by cattle. To obviate this objection, it is well to give the hay a good *sweating* in cock. Soon after the grass is cut, or when it is fairly wilted, and the external moisture dried off, put it into cocks which will make from fifty to sixty pounds, (dry hay,) and let it remain in that situation

for twenty-four to forty-eight hours. Then shake the hay out lightly, in a drying day, and it will be found much more soft and more agreeable to stock than if made in any other way. Time is also gained in the making in this way,—the hay drying much more rapidly after it has been sweated. Where it is intended to be pressed and baled, or exported, the practice of drying it in swath may do, provided the grass is not cut till it has become quite ripe; but the hay will be harsh and not as good, especially for sheep and cattle, as that made in the mode above described.

FIXING AMMONIA.

MESSRS. EDITORS—Your correspondent, T. H., of Colchester, Canada West, and yourselves, invite remarks upon the above subject, in your last number. If you please, you may insert the following from a "*chemical friend*" who takes and reads the "*Cultivator*," although not a practical farmer.

First, as to *facts* in the case. Gypsum, or sulphate of lime, is not a super-salt, or rather, there is no super-sulphate of lime, as supposed by T. H. Gypsum is composed of one equivalent of sulphuric acid, and one of lime, and two equivalents of water, (i. e.) the common gypsum used for agricultural purposes. Gypsum and carbonate of ammonia when brought in contact, at common temperatures, will mutually decompose each other, and the resulting compounds will be sulphate of ammonia and carbonate of lime. The ammonia in *rain water* is in the form of a *carbonate*, and gypsum "*fixes*" the ammonia by the two compounds mutually decomposing each other, and converting the ammonia into a sulphate, which is a *fixed salt*, thus rendering it useful to vegetation. The difficulty with T. H. seems to be that he does not reconcile this with his table of affinities. The difficulty in the matter seems to lead T. H. to doubt THE FACTS. Now, no ABSOLUTE reliance can be placed upon tables of affinities, in *all cases*, as was once supposed by Geoffroy and others. There are so many *disturbing extraneous causes*, that the *exceptions* in many cases would form the *general rule*. Among these disturbing causes, we may mention heat, light, electricity, and cohesion or density—all tending to disturb our tables of affinities, so that should we place too much reliance upon them, they might lead us to contradictory and erroneous conclusions. "Sulphuric acid has a stronger affinity for lime," says T. H., "than for ammonia." It is true that the affinity between the *elements* of gypsum is greater than between the elements of sulphate of ammonia; but it is not true, as T. H. says is "evident to his mind," that carbonate of lime and sulphate of ammonia will, when mixed together, mutually decompose each other. No chemical action takes place under the circumstances supposed. An experiment that will prove two things, may be tried in the following manner: Add to two quarts of pure rain water, in a chinaware dish, about a tea spoonful of sulphuric acid, then evaporate nearly to dryness, then add a little pulverized lime, and you will readily perceive the *peculiar* smell of ammonia. Now this proves, that there is ammonia in rain water, and that lime will decompose the sulphate of ammonia, forming sulphate of lime; but *mind*, there is no carbonic acid present. That escaped in the form of a gas when the sulphuric acid was added to the rain water. If *carbonic acid* had been present, it would have prevented the chemical change. Now, neither carbonic acid or ammonia *alone*, will decompose gypsum or sulphate of lime; but when the two are to-

gether, which is always the case in rain water, stables, &c., where ammonia is sensibly present, from the decomposition of animal matters, a mutual decomposition takes place. The "*apparent discrepancy*," if any, may be explained in the following manner, by what, in the books, is called "*double elective affinity*." But I will explain it, I think, so that all your readers will readily understand it. Let the force or affinity by which the elements of gypsum (sulphuric acid and lime,) are held together, be called "*quiescent*" affinity, and (for illustration,) be represented by 20. Again. Let the force or "*quiescent*" affinity between the elements of carbonate of ammonia be represented by 5. Now bring the two compounds together, and a new set of affinities is brought into action, viz: between the sulphuric acid and ammonia, and between the carbonic acid and lime. These new affinities are called "*divellant*," and are greater than the "*quiescent*" affinities, in the case in question. We will suppose, for illustration, the affinity between the sulphuric acid and ammonia, to be 15; and between carbonic acid and lime, 15 also; the result would be as follows:

Quiescent Affinities.

Sulphate of lime, 20 }
Carbonate of ammonia, 5 } equalling 25.

Divellant Affinities.

Sulphate of ammonia, 15 }
Carbonate of lime, .. 15 } equalling 30.

Now you perceive that the *sum* of the "*divellant*" affinities is greater than the *sum* of the "*quiescent*" affinities; and hence the change. But you take carbonic acid out of the question, which T. H. does not take into account, and you abstract a force or power in the supposed case, equal to 15, which in the *case in question exists* between the carbonic acid and lime, tending *directly* to separate the lime from the sulphuric acid. Thus, you perceive, that the table of affinities of T. H. is *no guide* any farther than "*single elective affinity*" is concerned, which takes place in the case in question, when carbonic acid is *absent*. I think this will be sufficient to explain the *modus operandi* in the change in question.

Now, Messrs. Editors, the *fact* that gypsum will fix the ammonia that descends with the gentle dew and rain from heaven, and thereby render greater facilities for vegetation to acquire the indispensable principle nitrogen, is a wonderful and most valuable discovery in these days of progress; far more useful, perhaps, to the human family, than the fabled waters of *Lethe*, or its more *modern reality*, which soothes the system into quiet and repose, and renders it insensible to the surgeon's knife. It is no doubt a great boon to mankind to be relieved from the consciousness of pain while undergoing the severe ordeal of surgical operations. Yet the pains and horrors of *starvation*, which can neither be removed or alleviated by any fabled or real *Letheon*, but demand

bread! bread! with an eloquence and earnestness that fiends themselves could not deny, were it in their power to give, is far more terrible than the surgeon's knife when experienced in all its reality. This modern discovery of the effects of gypsum in fixing ammonia, is to the human race what "Letheon" is to the afflicted. They must both be properly used, and the results are alike most wonderful and valuable.

By direct experiments, it is found that 4 lbs. of rain water, contain one grain of ammonia. Now, take the four months of April, May, June, and July, and according to experiments made by Schubler, there would fall, ordinarily upon one acre, about 60,540 tons of rain water. This would give us ammonia enough, could it all be made fixed in the soil, to yield about 45 lbs. of nitrogen, which is as much as is contained in 2½ tons of hay; but not as much as would be contained in the straw, seed, and roots of some kinds of grain that might be raised on an acre, though more than would be necessary for what is often produced. Hence the reason why gypsum is more valuable for grass when used alone, than for grain. Soils, abundant in all the alkalies necessary for the vigorous growth of grain, would need more nitrogen than is contained in the ammonia of rain water. Chemistry points to the liquid excrements of animals as the most ready means to supply it. From

the fermentation and decomposition of these substances, carbonate of ammonia is generated, and the ammonia should be fixed to the soil by all the means within our power; the readiest of which, perhaps, are gypsum and charcoal. The office of charcoal is two fold. Firstly, by supplying carbon to plants, in the carbonic acid absorbed from the atmosphere, and secondly, by condensing ammoniacal gas within its pores, which is easily separated by plants and appropriated to their use when the ground is moist. Decayed wood is nearly like charcoal; hence the value of decaying woody fibre, in the shape of what is called *humus*, peat, &c., though peat contains decaying animal matters in conjunction with woody fibre, and thus is more valuable still as a fertilizer to many soils.

There has much been said as to the effects of gypsum upon soils, when used for a series of years in succession, as to a tendency to exhaust them. How gypsum *may do good*, I have shown above. I may, at some future time, say more upon gypsum, and some other things, if the pages of the Cultivator should be no more profitably employed.

SPALDING.

Rouse's Point, N. Y., April 6, 1847.

[A communication on the above subject, received subsequently to the foregoing, will be given next month Eds.]

AGRICULTURE AND RURAL ECONOMY OF EUROPE.

LETTERS FROM PROF. NORTON.

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Utrecht, Netherlands, May 15, 1847.

MESSRS. EDITORS—Since my last, everything in the vegetable world has been almost without change until the last week or ten days, during which the weather has been warm and springlike. The development of vegetation within this period has been extremely rapid, more like that of a colder climate, than is usual here.

The various grain crops are coming forward rapidly, and we are now better able to judge of the prospect for the ensuing harvest. The autumn sown grain seems generally in this, and I am informed over other large districts, to have suffered from the winter, the crowns of the ridges being sometimes almost entirely bare. The color, however, is green and healthy. The spring sown grain almost universally appears extremely flourishing.

I have been much pleased in the course of a walk to-day, with the appearance of the pastures; they present a deep living green, and a closeness of herbage that I have rarely seen equalled. It is only, however, within the last two weeks that they have been in a condition to save the remainder of the farmers' hay ricks. The cows are now in the spring, turned into their pastures without the *jackets* in which they were universally clothed during the autumn. I got a look into a dairy farmer's cow stable a few days since. The cows all stood with their heads inward, and a passage behind. There seemed to be no manger, in fact nothing in front but upright sticks, curved a little in the middle, so that the animal could pass its head between them and eat from the ground. They were placed almost as closely together as they could stand. The barns are generally of brick, with low walls and high steep thatched roofs. The houses on the exterior are of much the same model, but smaller in size, and the two are frequently in closer contact than would please our farmers.

It is considered here a distinguished mark, or rather presage of good fortune, if a pair of storks choose to

locate themselves on the chimney of a person's house. These singular birds almost always build upon the tops of chimneys. I saw one chimney upon which an old cart wheel had been placed, both for the convenience of a pair of these birds of good omen, and in order that the draught of the chimney might not be stopped. Upon this cart wheel they had collected an immense mass of sticks and grass, certainly a foot in thickness.

Much trouble is taken to collect manure, and materials for forming composts; the ditches are carefully cleaned in spring and autumn, and large quantities of excellent materials for the latter purpose obtained. But by a singular inconsistency, these heaps, gathered by so much toil, are frequently placed upon the very borders of ditches, where the liquid drains away. I saw this morning a beautifully made heap of manure, 30 or 40 loads, arranged on a flagged slope, leading from the back of a barn down to a ditch of about six feet wide, filled with water in which was a slow current; this water was colored almost black by the drainings of the heap, thus conveying away certainly a fourth part, if not a third, of its value.

The small cross roads here are as bad as our own, being almost impassable in spring. In Friesland, where the soil is clay, all of the travelling at this season is done on the canals.

I have been favored to-day with a sight of 15 or 20 of the swinish tenants of the Dutch farm-yards. I do not pretend to much learning in this branch of knowledge, but I instantly recognized a likeness, which I think I have seen in your paper, of an animal usually called a hog, but which your correspondent insisted upon naming a *landpike*. They were all legs, and head, and ears, and tail, and hair. The back approached a semicircle, with a row of bristles like the back fin of a roach or perch; the lower line of the body followed in some degree the line of the back, being somewhat contracted in the middle; the hams and shoulders were merely slightly enlarged continuations of the lower portions of the legs. The idea of *fat*, in connection with

such animals, seemed quite preposterous. I have heard several Dutchmen say that they considered pork as an inferior kind of meat, and am no longer disposed to wonder at their prejudice, especially if they have ever had their attention drawn to one of these creatures while living. Yours truly,

JOHN P. NORTON.

NOTES OF A TRAVELLER IN ENGLAND.—No. 5.

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DRAINING—IRRIGATION.—In the advancement of agriculture in England, draining bears a most important part. It is now being adopted in all well cultivated districts, and the beneficial effects are everywhere apparent. It is not improbable that the excessive moisture of the climate in England, requires more thorough draining of the land, to remove the excess, than with us. The drains most frequently used in English husbandry, are blind, or covered, so that there is no loss in the cultivation of the land. From a careful inquiry as to the beneficial results of systematic draining, I am satisfied that in very many instances, the product of the land has been more than doubled, and its value increased in like proportion.

The depth and width of the drains must of necessity vary, as the nature of the soil, the quantity of water to be removed, and the descent which may be obtained in the drains, may render necessary. I should judge from what observation I was enabled to make, that from thirty inches to four feet was the usual depth, though in many instances a much deeper drain is used. Prof. Johnston recommends that drains should be at least three feet in depth, and his recommendation meets with much favor. Draining tiles are generally preferred, and they are at present probably the cheapest article that can be had for the construction of permanent drains in most parts of the kingdom. Considerable care is necessary in covering them. It is said, and I doubt not truly, that the number of acres of land heretofore worthless, which have been rendered valuable and productive by means of systematic and thorough draining, now amounts to many millions of acres. Much, however, yet remains to be done, before the entire country will be brought under such a complete system as will enable the farmer to realize from his land all that good husbandry in this respect would give him.

The actual decrease of moisture in well drained portions of the kingdom, has been satisfactorily established. The health of those districts where thorough draining has been resorted to, has been obviously improved. This is so apparent, that those engaged in the inquiry as to the causes of the surprising mortality which still exists in some sections of the country, have made careful examinations as to the results on health, and have given it as their opinion that the mortality in these districts has been diminished more than one-third. The subject in this point of view is attracting much attention, and it will doubtless be urged upon the public until a thorough system is adopted throughout the entire kingdom.

In Ireland it is far more needed than in England, much less having been done. The government are at present turning their attention to this and other means of improvement, and unless the landholders become wise to their own best interests and adopt improvements themselves, it is not improbable that parliament will be compelled, in order to save the millions of the laboring population of Ireland from absolute starvation, to force the landholders to enter into these measures. That Ireland can support her own population, if proper means are adopted in the cultivation of the soil, no person who has visited that fertile isle can for a moment doubt.

That great improvement may be made in lands in this country by thorough draining, is apparent from the success which has attended what has already been done. Many of our farmers are turning their attention

to it, and wherever an Englishman or a Scotchman settles, an example is given in this respect which our countrymen are prone to imitate. Was this much more common than it is, the productions of the land and a greater certainty of a crop, would satisfy every farmer, that much might be learned in this matter, to our advantage, by following a practice which has proved of such immense advantage across the water.

Irrigation is practiced to a considerable extent, and when judiciously conducted, with most surprising results. In many sections of the country, every little stream is used to advantage. Dams are erected, and slight ditches, so as to water the whole surface, are cut through the fields, and the land is flooded as occasion requires. The increased product is in many cases very great. The grass land is mostly benefitted, but on some grain crops I saw it used to advantage, though great care is required, lest the crop should be injured by an excess of water. In the neighborhood of some of the large towns, where the streams receive the wash of the sewers, I have observed a remarkable fertility in the meadows and grass lands.

The agriculture of England never could have attained its present state of improvement, had not attention been given to the adoption of every available means to enrich their lands, and thus secure a bountiful return in the crops. There are, it is true, many portions of the country, where these and other improvements have not been fully carried out,—but those portions are constantly lessening in extent, and the time is not far distant, when they will in a great measure be only known in the recollection of the past.

If this practice is thus useful in the moist climate of England, how much more advantageous would it prove with us, when our lands are so often parched by the burning heat of summer, which is rarely known there. Irrigation and draining should go together, as there is danger frequently of a surplus of water, and the drains will take off what is more than sufficient for the healthful growth of the grain or plants.

It has been often said to me by gentlemen, that the methods of English husbandry cannot be adopted here. I am aware that there are some practices there that cannot be made to apply here, nor be suddenly introduced; it is necessary to proceed with caution—but it will be of immense advantage to our farming interests, if attention is given to practices which have been successfully adopted elsewhere. In this way we may learn from the experience of others, select those methods which are suited to our climate and our circumstances; and thus, without loss of time, we may avail ourselves of their experience, which has cost years of labor and vast expenditure of means. Draining and irrigation may be adopted wherever necessary, and without such an expenditure as to render them burdensome. The increase of crop, the advantage to health, and the reclaiming of land now unproductive in many cases, would lead to results most beneficial to the agricultural interests of this country.

H.

RURAL NOTICES ABROAD—No. VI.—By CAIUS.

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LOMBARDY.—The most striking rural feature of Lombardy, is the festooning of the vines from tree to tree along the way. The country is flat, and exceedingly productive, and reminded me frequently of the richest portions of the meadows along the Connecticut river. The roads are broad and kept in excellent condition; on each side, through all the rice growing portions of the country, are large ditches, from which the water is drawn off as needed, for the rice fields beyond them. Just across these canals, are lines of trees running for miles parallel with the road, and through a large part of the kingdom, absolutely burthened with vines.

The water of the canals is also used for irrigation of

their grasses, and even of corn land. Indeed, I do not remember a district where irrigation appeared to be conducted on so grand and so scientific a scale as in Austrian Lombardy. The first engineers are employed,—and that they have good ones, the excellence of the roads is sufficient proof—and the privilege of using the waters is let out by contract. The closest watch is kept of all the sluice ways, and water is sold by inches.

Grass fields cut, not unfrequently, three heavy crops in a season. And even two crops of the lighter grains have been matured. The corn (maize,) is most abundant in its produce—cultivated almost uniformly in lines; and its tillage not differing much from that practised in our own country, except that it is far more thorough.

The peasantry of Austrian Lombardy have by no means the contented look of those of Tuscany; still they are in general well clad, and healthy looking. They are rarely the owners of the lands they improve; though families frequently occupy the same farm from generation to generation. The implements are not so perfect as in Tuscany; nor is the same encouragement given to new methods, or improved means of pursuing field labor. The oxen are exceedingly fine, and great care is taken of them; you not unfrequently see them in the field blanketed, to protect them from the flies and the rain. The yokes are beautifully made, and fitted for easy draft.

The barns through all of Lombardy are huge—set up upon pillars of stone, and laborers live under the same roof with their cattle.

Between the Austrian dominions and Tuscany, stretches a pile of the Appenines, and just under its nearer side, a limit of the Papal territory; in this lies the old city of Bologna.

BOLOGNA.—In its neighborhood cultivation offers a striking contrast to that of the more southern Papal lands. All is as rich as a garden. The vegetables in the markets are hardly surpassed in Belgium. Hedges, too, are neatly trimmed; and it is with feelings of gladness, that one, after toiling over the mountains south of the city, leaves the sight of their ugly fissures, and barren, heathy sides, for a look out upon the sweet lap of valley in which lies Bologna. As you ride down towards it, hedges take the place of broken and homely walls; locust trees in blossom perfume the air,—the clover carpets acres with its crimson tufts, waving over the sides of the hills like silken plush; sweet briar, and flowers of every hue, are on each side of you, and plum trees, and cherries, are in the promise of bearing; while on the plain land below, in a great prairie of checkered grain, and grass, and orchard,—running away flat and broad as a sea, to the distant horizon,—are the roofs and leaning towers of the city.

Indeed, in all that regards progress, whether in agriculture or commerce, the Bolognese are far before the other subjects of the Pope. And this it was that made them the most restive and revolutionary of all, under the tyranny of the old sovereign.

Coming down upon the plain, where lie the little governments of Parma and Modena, you see great fields of hemp and flax, the former of gigantic growth; and in the cottages you see the peasantry spinning.

A penny a day is the average earning of the flax spinners. No wonder they want to come to America.

Mulberries appear occasionally. Elms and poplars are the prevailing trees in the flat land.

The Bologna sausage is famous over Europe; but its peculiarity is merely in the making. Indeed, it is now successfully imitated in most other continental cities, as well as to some extent I believe, in our own. The swine I observed in Italy—out of Naples—were mostly of inferior description.

I have thus given running glimpses of the rural appear-

ances of Italy—purposely brief and without detail, since little is to be learned by us in way of improvement, from study of Italian agriculture. There are, however, some things in their systems, by attentive observation of which, we should be gainers.

First—in respect of irrigation. No where in Europe is the proof of its good effect so apparent as in Lombardy; no where is it conducted with more care; no where does it so richly repay the outlay. Nor is the general surface more favorable to the system than in many parts of our own country.

Second—in care of cattle. The oxen and cows of Tuscany and Lombardy are more sleek and beautiful in their appearance, than any I remember to have seen elsewhere. This is owing to nice preservation of breed,—to proper and full feeding, and to regular and judicious cleaning, and protection from the weather. I may add further, that their docility and strength were equal to their good appearance.

Third—in economy of ground. The lines between fields are almost uniformly set with trees in some way productive—either as supports to vines, or furnishing food for silk-worms. Their grain fields serve in some measure as orchards; and the practice of soiling is the fullest possible proof of best land economy.

Fourth—in substantial nature of their buildings. They are of lasting materials—well constructed—ample in size—nor are they without those graces of neatness and beauty to which some American farmer are as insensible as brutes.

Fifth—in multiplication of products. If the silk crop fail, he has his grain, or his wine, or his orcharding. Thus too, he tests and brings into exercise every quality of his soil.

Sixth—his cheerful labor. He sings among his vines, and they make a chorus together at the reaping. In his cottage, and on the mountain, he wears a contented and a courteous look. May not the American farmer, with twice the success of the poor Italian, and as rich a country, study with benefit, to wear a like air of contentment—at least out of courtesy to those with whom he comes in contact;—if not with the higher intent of making it—as it were—an every-day thanksgiving to Him, “*who turneth rivers into a wilderness, and the water-springs into dry ground?*”

In my next paper I shall speak of some other portion of the continent.

PRESERVING EGGS.—This is the season to put up a store of eggs, against “time and need.” There are various modes of preserving them. Lime-water has been found to answer well. Mr. H. A. Parsons, of Buffalo, informs us that he has been successful in preserving them with salt. He takes large stone jars, or tight kegs, and packs the eggs *on the small end*, first putting in a layer of salt, and then a layer of eggs, taking care that the eggs do not touch the keg or jar. In this way the vessel is filled to near the top, when it is carefully covered over and placed in a cool dark place. Mr. P. has kept them in this way, perfectly good for three years. It is important that the eggs should be new, not more than ten days old, when put up, if it is intended to keep them a great while.

CURING HAMS.—The editor of the Farmers’ Cabinet says that his mode—the best he has fallen upon in a practice of 30 years—is to wrap the hams completely in newspapers, and then enclose each in a muslin bag, drawing the mouth of the bag closely about the string which is attached to the ham and by which it is suspended. A correspondent of the Ohio Cultivator never finds any care necessary in excluding flies, when a teaspoonful of red pepper has been rubbed upon the fleshy part of each ham before salting.

THE ORCHARD AND THE GARDEN.

MANURING PEAR TREES.—I notice in the March number of the *Cultivator*, a short article on transplanting fruit trees, by Mr. WORDEN, in which he recommends manuring the ground highly for them, and speaks of producing a growth of 8 feet in a season, on a pear graft, by the use of hog manure. This manuring ground highly for fruit trees, may do well at the east, with some kinds, as, for instance the apple, but for the pear, I do not believe such a system is safe at all. At least it would be utterly ruinous here at the west with the pear tree, and more or less hurtful with all kinds of fruit trees on a large proportion of our soil. It is well known that the pear tree is liable to a disease called the frozen sap-blight, which I have heard has almost destroyed many of the finest pear orchards at the west, and as I learn from various sources, is becoming somewhat prevalent at the east. Those who are best acquainted with this disease, believe it to be caused by a rapid and unripe, or a very late growth, which utterly unfits the trees for withstanding our severe winters. Nothing could be more likely to produce such a growth than to excite the roots by manuring them so highly, and hence I view it to be very unsafe; although under favorable circumstances they might escape. A thorough cultivation of the soil, aided, if necessary, with some weaker, less stimulating manure, I should much prefer. The thorough cultivation alone, is a great plenty here. So far as I have seen, the poorest soils of our prairies and openings, are the most favorable to the health and productiveness of the pear tree. The great desideratum, the "*ne plus ultra*," in growing pear trees, (and indeed, every kind of fruit tree,) is to have a firm, well-ripened tissue, which alone will insure them against injury in our trying winters. I should much rather have a firm, sound growth of two feet in a season, than a forced, unripe growth of eight feet. In regard to the west, I speak as having had some little experience here; of the east I know less to be sure; but if I am wrong in thus advising in regard to pear trees there, will Mr. THOMAS, or some other experienced horticulturist, set me right. But if I am right, will our friends remember this, if they wish to raise pear trees.

BUDDING.—I do not agree with Mr. SMITH, in the March number, in regard to budding. He recommends stripping off the leaves before inserting the bud, and after it has started, to cut off the top. As to stripping off the leaves, it seems to me to be not only perfectly unnecessary, but very injurious to the trees. Nor would it be so very easy to prepare a lot of several hundred or thousand trees in this way, as in a nursery, for instance. I am sure I should seriously object to having caterpillars do it for me, even if they were inclined to, about the right time, and quite as much on account of losing the leaves as anything else. The tree, if thus stripped, would of course lose the leaves already formed, and that at a time when its main strength (so to speak,) lay in its leaves, the roots having been pretty well exhausted in forming them. The leaves, as every one ought to know, are indispensably necessary to enable the tree to complete and ripen the growth already commenced, and if the first, main set of leaves be removed, it must put forth a new and comparatively feeble set, with which to finish its growth. To do this, the roots must be again severely taxed, which of course enfeebles them, and thus the whole growth is materially checked in the operation, and a comparatively stunted, weakly growth ensues. The tree may, however, after

a time, partially recover, so as to cause somewhat of a rapid growth in the bud which has started, in consequence of removing the top above it. This growth will of course be the most rapid and unripe, when other trees not so treated have mostly closed and are ripening their growth, and hence, winter will overtake it still growing, or at least, very much unprepared for that season. Thus, by this operation, the order of nature is seriously broken in upon, which all know cannot be done with impunity.

The effect will generally be, that the growing bud will freeze down more or less, which, with the shock received by the tree at the time it was budded, and when winter sets in, will make the growth the next season much more feeble than if it were treated in the ordinary way. This, at least, is my experience on the subject. I have no doubt if Mr. S. will but try the common method, and if favored with common success in it, he will fully agree with me. Budding in the summer, and removing the top shortly after, so that the bud will start to grow immediately, is, however, practised a few degrees south of here, as I have been informed by Mr. ALLDREDGE, an experienced nurseryman living at Indianapolis, Ia. He writes me that he buds mostly in June and July, and tops 15 days after—that he succeeds better with apples in this way than by grafting, and frequently obtains a growth of from two to three feet the same season. The difference in the length of the seasons, (to say nothing of the difference in the soil,) there and in this latitude, (about 42½,) especially at the east, is so great as to render his success entirely unattainable so far north as this. I can think of but one possible advantage which this method would have over the usual one in this latitude. That is this; so far as I have noticed, the buds, when they first start, after the top is removed in the summer, are never troubled by insects, which in the spring sometimes eat out and destroy the buds.

"PECULIAR GROWTH OF VARIETIES."—A few words in regard to what Mr. THOMAS says in the same number, about "the peculiar growth of varieties." On this subject he and I do not agree fully on some points, but on some of the most important ones we do agree, and I trust I shall be excused for again calling the attention of such of your readers as are interested in this subject, to them.

1st. That the characteristics of fruit trees, the description of which I laid so much stress upon in my article in the *Horticulturist*, to which he alludes, and which I am so desirous of seeing incorporated as a part of the standard descriptions of varieties, in our horticultural works, form "a useful auxiliary to the description of some varieties."

2d. That they furnish "important aid to accuracy to every nurseryman, who" lastly, "*may usually recognize his trees by the appearance of their growth*,"—that is, if I understand him, if he will but take the pains to study and make himself familiar with the peculiar characteristics of the different varieties.

It is earnestly to be hoped then, that our nurserymen and horticulturists will take hold of this thing with a determination to make themselves as thoroughly acquainted with their varieties as possible, so that if there were any "mixing" among varieties of trees they had purchased or propagated, they might be able to detect and neutralize the mistake. This branch of horticultural knowledge, is, in my opinion, a very important one,

and has been, I fear, sadly neglected amongst us. F. K. PHENIX. *Delavan, Wisconsin, March 25, 1847.*

FAILURE IN BUDDING.—I have been, during twenty years past, more or less engaged in budding, grafting, &c. Last year, about the middle of the season of budding, I inserted some buds of the Mayduke, Napoleon Bigarreau, and two or three other varieties of cherries, with almost perfect success, except with the Napoleon Bigarreau. In the case of these, the gum commenced exuding after two or three days, the bark failed to unite with the stock, and *every bud failed*. This was the result with buds set at three different times, at intervals of three or four days. The trees were growing in *five different gardens*—were all apparently perfectly healthy and vigorous, and are now mostly *dead*.

The few that are living look as if they were in "the last end of a hard winter." I know of one other instance in this neighborhood almost precisely similar. What caused the failure of *all* the buds of this particular variety, and the death of the trees? BAILEY. *Binghamton, May 31, 1847.*

ORIGIN OF THE BALDWIN APPLE.—This fine fruit, so much esteemed where it is known, originated in Wilmington, Massachusetts. Its history was given somewhat in detail, several years ago, in the *New England Farmer*; but an abridged and somewhat improved edition was given in the *Horticulturist* for January last, by B. V. FRENCH, Esq., Vice-President of the Mass. Hort. Society.

"The original tree," says Mr. F., grew on the farm of a Mr. Butters, and was known for a time as the Butters apple. This tree was frequented and pecked by the wood-peckers, and Mr. Butters called it the *wood-pecker apple*. This fruit must have been known about a century. From Col. Baldwin, of Woburn, and his family, who introduced it largely into public notice, it took the name of 'Baldwin,' by which the fruit is now everywhere known. I am informed that Col. Samuel Jaques, of Somerville, eminent as an agriculturist, breeder, and horticulturist, as well as a public benefactor of his age, now owns that part of the farm on which the original Baldwin tree grew, and has placed a monument on the site where it once flourished."

The principal facts as above given, we have more than once learned from Col. JAQUES himself. In a letter lately received from him, he says—"Whenever I go to the spot on my farm where this memorable tree once stood, I am carried back in agreeable recollection, to 1784, when I went with Col. Loammi Baldwin, of Woburn, and my father, and saw them take scions from this tree. When Col. Baldwin's scions bore fruit, he sent some barrels of it to a particular friend in England, where it created so much excitement that letters came to this country inquiring for the '*Baldwin pippin*,' as it was there called; hence the name Baldwin apple."

EARLY POTATOES.—The very superior early potato, sometimes called "Hall's early June," has been known in this vicinity for eight or ten years past, as "*Ross's early*," their true name. They originated in Scotland, and were brought to this country about ten years since, together with thirty other varieties, by Mr. JAMES WILSON, the well-known nurseryman of this city. He procured them of Mr. LAWSON, of Edinburgh, the seedsman of the Highland Agricultural Society of Scotland.

After sufficient trial of all the varieties, Mr. Wilson selected the Ross's early, as the best very early variety. He also selected two other kinds—the Shaw's early, and the Stafford Hall—the latter a late potato of very fine quality. The others he found no better than many old varieties common all over the country, and consequently not worth extending.

The Shaw's early, are a very desirable variety. They are what are commonly called "second early," ripening about fourteen days after the Ross's, and are much better for a general crop, as they are very uniform in size, and very prolific, when grown in good soil. They are oblong; the Ross's round.

I have called attention to the above facts because I think it high time a check be given to the multiplication of names in vegetables, fruits, &c. It is an evil which is rapidly extending itself, and the consequence is, confusion to all who are not on the *qui vive* in detecting it. HERMAN WENDELL. *Albany, June, 1847.*

[The kind of potato which our correspondent thinks is "*Ross's early*," was brought to our notice by Prof. HALL, of this city, and was first spoken of in the *Cultivator* for 1844, page 302, under the name of *Early June*. There was, however, in that notice a little mistake in regard to its shape. It was described as *round*, whereas it has a tendency to the *oblong* form,—especially when grown on favorable soil, or when the tubers attain a large size. Our description was given from the first specimen shown to us, which happened not to exactly represent the variety. The larger they grow, the more they deviate from the round form. As to their "true name," we are inclined to doubt whether it is that given by our correspondent. We shall compare it this season with Ross's early, and endeavor to learn its history, that it may receive its true name, if it can be ascertained.

EXTENSIVE FRUIT CULTIVATION.—A large establishment for supplying the Philadelphia market with peaches, sold, in 1845, 25,000 bushels, from 16 cents to \$2 per bushel, averaging 50 cents per bushel. For several weeks, two sloops and one steamboat were required to carry the fruit to market. One of the proprietors has just commenced an orchard in Ohio, beginning with setting out 10,000 trees.

ENORMOUS GRAPE VINE.—A correspondent of the *Horticulturist* states that there is a native staminate grape vine, growing two miles from Burlington, New-Jersey, on a farm called West Hill, which at three feet from the ground, measures *six feet one inch* round the trunk, and at ten feet high, is three feet in circumference. It is still healthy, and its giant folds run over and cover four trees, one of which is a full sized white-oak, and the others quite large.

WATERMELONS.—Another correspondent of the same journal, says, "The most successful grower of watermelons that I ever knew, was a person who every year turned under a piece of sod, in a good meadow soil, and planted his crop thereon. He counted his crop by wagon loads, when his neighbors did theirs, raised on good, but old garden soil, by tens and scores only."

EXPERIMENT WITH ASPARAGUS.—The London Gardeners' Chronicle mentions the following method of growing asparagus at Nice. Perhaps it does not partake of the character of the marvellous, and it may be very easily tried. "Take a quart wine bottle, invert it over an asparagus root, just rising from the ground, and secure it to its place by three sticks. The asparagus will grow up into the interior of the bottle, and being stimulated by the unusual heat and moisture, will speedily fill it. As soon as this has taken place, the bottle must be broken, when the asparagus will be found to have formed a thick head of tender, delicate shoots, all eatable, and as compact as a cauliflower."

DRIED STRAWBERRIES.—A London paper states an experiment in drying strawberries, by attaching threads to their stalks, after a little over-ripe, and hanging up to dry. The result is stated to be entirely satisfactory, "that sweet, refreshing acid, peculiar to the strawberry, being in full perfection,—the flavor of the fruit without any watery taste, delicious,—and dissolving in the mouth as slowly as a lozenge."

MONTHLY NOTICES—TO CORRESPONDENTS, &c.

COMMUNICATIONS have been received, since our last, from F. E. Hill, A New Englander, J. O. D., L. Sanderson & Co., T. S. McLelland, J. B. Oley, H. Matison, J. W. Curry, Bela Hubbard, John Shillaber, A Subscriber, Bailey, J., J. D. J., Prof. Norton, Prof. Horsford, Caius, S., J. G. C., G. S., D. S. Curtis, T.

We omitted to acknowledge in our last number, the receipt of 25 select varieties of Dahlias, from Messrs. ELWANGER & BARRY, of the Mount Hope Botanic Garden and Nurseries, Rochester, for which they will please accept our thanks.

FINE SAMPLE OF WHEAT.—We have received from Mr. D. A. BULKLEY, of Williamstown, Mass., a sample of wheat grown from seed received by him from Smyrna, in 1845. It is a spring variety, and is, in size of grain, whiteness, and weight, superior to any spring wheat we have before seen. Should it prove suited to our climate, and yield good crops of a quality equal to the sample sent us, it will be a valuable acquisition to the country.

GUANO—CORRECTION.—In an answer to an inquiry last month, 200 bushels of guano were said to be a proper quantity for an acre. It should have been 200 *pounds*. It is applied in quantities varying from 200 to 600 lbs. per acre, but the former is the quantity more generally used.

RECENT IMPORTATION.—GEORGE VAIL, Esq., of Troy, has lately received from England a Short-Horn heifer, three years old, bred by the distinguished breeder, THOMAS BATES, Esq., of Kirkleavington, Yorkshire. Her pedigree is thus given: Got by 4th Duke of Northumberland, (3649,) her dam by Duke of Cleveland, (3640,) her grand dam by Belvedere, (1706.)

SALE OF VALUABLE SHORT HORN CATTLE.—We invite particular attention to the advertisement in this number of the sale of Col. SHERWOOD'S Short-Horns. There are but few herds in the country which have been selected and bred with such strict attention to purity of blood, and regard to the qualities for which this breed is considered pre-eminent, as this. The originals were obtained from the well known and distinguished herds of the late Hon. STEPHEN VAN RENSSLAER, Mr. F. ROTCH, and Mr. L. F. ALLEN. Their descendants in the hands of Col. S., have fully sustained the reputation of their progenitors, and are, no doubt, fully equal or superior to them in valuable qualities. Such an opportunity for the purchase of the best stock of this description, will not, probably, occur again for some time.

FINE BULL FOR SALE.—We would call attention to the advertisement in this number, of Mr. DONALDSON'S fine Short-Horn bull *Prince Albert*. The portrait of this animal accompanied our August number for 1845. We are informed that the heifers from this bull have proved very superior for the dairy. It will be seen that he is to be sold at the Saratoga Fair, and those wishing a superior Short-Horn bull, will do well to examine him.

AYRSHIRE BULL FOR VERMONT.—Mr. J. W. HOWES, of Montpelier, Vt., has lately purchased of E. P. PRENTICE, Esq., of Mount Hope, near this city, a very superior Ayrshire bull. He is out of Mr. P.'s imported Ayrshire cow, which has attracted much attention on account of her fine symmetry and remarkable dairy qualities—being in all respects a perfect cow in *miniature*.

Small as she is, she has frequently given over twenty measured quarts of milk per day, on grass only. The bull is two years old, of good size for *any* breed, very well formed, of thrifty growth and vigorous constitution. In fact, he is one of the very best Ayrshire bulls we have ever seen, and would be "hard to beat," whatever might be the variety from which his competitor should be chosen.

HEREFORD CATTLE.—Messrs. M. & A. L. BINGHAM, of Cornwall, Vt., have purchased of Mr. W. H. SOTHAM, seven head of Hereford cattle—three cows, three bulls, and a bull calf. They are all fine animals. The cows are *Perfection*, a cow of massive size and stately form, *Lucy*, a well-shaped and capital dairy cow, and *Fat-Rumps*, a large and handsome animal. Two of the bulls are a year old the past spring, and are very well formed and thrifty—the other bull, (*Dangerous*,) is five or six years old. This stock will be found well adapted to the section for which it has been chosen, and on the rich pastures of the lake shore, will thrive and fatten with a rapidity not exceeded in their native island.

Besides the above sale of Herefords, Mr. S. H. BATES, of Northampton, Mass., has purchased a very fine yearling bull, which was got by *Trojan* out of *Victoria*, one of the best cows imported by Messrs. CORNING & SOTHAM. Mr. WILLIAM KEESE, of Keeseville, Clinton county, N. Y., purchased some months since, the fine cow *Matilda*, and a young bull out of *Aston Beauty*, which, we hear, are doing well. Mr. EDWARD WELLS, of Johnstown, N. Y., has also purchased within a few months, from the same herd as above, two cows, a heifer, one bull, and four two year old steers, all which have been taken to his farm near Johnstown.

BLIGHT IN APPLE TREES.—Mr. V. W. SMITH, of Syracuse, has left with us several small branches of apple trees, which are affected with a malady similar to what is called *fire-blight* in pear trees. The blight attacks the trees in a singular manner. In some instances, a small branch at the end of a limb remains green and flourishing, while all the rest appears to be totally dead, the bark discolored, and adhering to the wood. We have not been able to find any insect, nor the ravages of one, which seems to have had any connection with the cause of the disease. Mr. S. informs us that nearly all the apple trees in the vicinity of Syracuse are very seriously affected in the manner above described. If any discoveries should be made in relation to its cause or prevention, we should be glad to give them publicity.

Since the above was written, we have examined some apple trees in this vicinity which appear to be affected in the same manner as those above mentioned. The orchard of Mr. PRENTICE, at Mount Hope, is very seriously attacked, and a large portion of the trees will lose their fruit. Many of the limbs are already dead, and many of the trees will ultimately die.

In fact but few that are not more or less diseased, and fears are reasonably entertained that all may be much injured. The disease seems to be identical with the fire blight of pear trees, which disease has nearly destroyed all Mr. P.'s fine pears.

LIBEL SUIT.—Some of our readers may remember that in our December number for 1845, page 377, the proprietor of the Cultivator replied to certain libellous charges against him, brought by a writer in the

American Agriculturist for the previous month, under the signature of "A MEMBER." In conclusion, we said—"Having thus shown that there was not a shadow of foundation for these charges, is it using too strong language to pronounce the writer of them an infamous slanderer? That his infamy may be proved, and the brand officially placed upon his forehead, the editor of the Cultivator has directed his counsel to demand the name of the writer of the article, that he may be prosecuted for the libel; and if the name of the author is refused, he will hold the editor and publisher responsible." The name of the author having been refused, suits for libel were commenced against the editor and publisher of the Agriculturist. Having no desire to go farther with these suits than to prove the falsehood of the charges brought against us, we cheerfully acquiesced in a proposition to discontinue them on the publication of a full retraction of the charges, in the paper where they were published. This was done, by the publication of the following notice in the American Agriculturist for April last:

TO THE PUBLIC.

"In an article which I wrote, and which was published in the American Agriculturist for November, 1845, charges were made against Mr. Luther Tucker, then Recording Secretary of the New-York State Ag. Society, of using his official influence to promote his personal interests. These charges were founded upon what I then supposed to be good authority; but further investigation has convinced me that there was no foundation for them. I therefore fully and freely withdraw those charges against Mr. Tucker, and believe his statement in reply to those charges, published in the Cultivator for December 1845, to be true."

"A MEMBER."

It will be seen that the retraction is full, covering not only those charges which were strictly *libellous*, but also all others brought against us. We cannot but hope that the author of them will learn a useful lesson from the entire failure of his efforts to obtain the object he had in view by the promulgation of these charges. With a degree of integrity commensurate with his ability as a writer, he might reasonably hope to attain the height of his ambition, while a course of intrigue and falsehood will be as certain, in other cases as in this, to be followed by detection and contempt.

GAS TAR.—A correspondent wishes to know whether a coating of *gas tar* will afford an effectual protection against sparks from locomotive engines. If any one can recommend an article which will answer the purpose, stating where it can be procured, the price, and mode of application, they will confer a favor.

DIFFERENT KINDS OF LIMESTONE FOR AGRICULTURAL PURPOSES.—T. S. Mc LELLAND, Esq., Tye River Warehouse, Nelson Co., Va., makes the following inquiry, which we should be glad to have answered by any of our correspondents who are acquainted with the subject:

"We have in many parts of this country, large quantities of variegated or marble limestone, which, in some situations, could be raised at inconsiderable expense. Is it equal to the blue limestone as an improver of the soil? I have heard that it was used, and preferred, in the state of New-York."

AGRICULTURAL COLLEGE IN TENNESSEE.—This institution is located at Franklin, five miles from Nashville, Tenn. We have before us a copy of the "Laws and Regulations," for which we are indebted to T. FANNING, President of the College. We have, on for-

mer occasions, frequently spoken of this institution, (see Cultivator, for 1844, pp. 74, 215, 362; and for 1845, p. 79,) and we are much pleased to hear that it continues in a flourishing condition. The following extract from a letter lately received from Mr. FANNING, will be read with interest:—

"You will see we have as much patronage as we could ask, and our system has in every way, succeeded far beyond our fondest expectations. We are enabling some twenty-five promising young men to educate themselves by their own industry; and all our students are much benefitted by the physical department. I suppose there is no institution in the United States in which the same attention is given to chemistry and natural history; and what is most remarkable, our students are generally delighted with such studies. It is my decided opinion, that no plan of making labor contribute to the education of youth, has been fully digested in this country. The great difficulty, you will find in managing agricultural schools, consists in a lack of men who possess a large fund of both *scientific* and *practical* knowledge. It is very idle for men who know not how to perform labor, in good style, with their own hands, and are mere smatterers in science and literature, to talk about agricultural education. My conviction is, that the system will succeed everywhere so soon as competent men can be found to manage it."

☞ The cut of "BLACK HAWK IN HARNESS," in our May number, is deemed by many a failure, so far as regards a correct delineation of the animal. We did not think the likeness a good one, but were induced for various reasons to publish it. The following criticisms on the cut, are by Gen. SILAS M. BURROUGHS, of Medina, a gentleman well acquainted with Black Hawk as he is.

"I have received the May number of the Cultivator, containing a likeness of Black Hawk in Harness, and have to express my regret that the picture is a failure—delineating the horse in no point as good as he is—and in many respects, a *very* faulty portrait. The neck has none of that elegance and remarkable boldness of air possessed by the original—it is not "clothed with thunder," as it should be to be faithful. The tail, though like, is not well set. There is an awkward stiffness in the position of the limbs, and the pastern joints are too long and ill set, falling back quite too much. Black Hawk is not faulty in this point. There is a total lack of muscular development, and the whole picture is tame and wanting in character."

MUNIFICENT DONATION.—HON. ABBOTT LAWRENCE, of Boston, has given FIFTY THOUSAND DOLLARS to Harvard College, to be devoted to education in relation to the practical sciences. Mr. LAWRENCE's object, as stated in a letter to the Treasurer of the University, appears to be to secure the establishment of three permanent Professorships, viz: "one of Chemistry, one of Engineering in its various branches, and one of Geology." By the appointment of Mr. HORSFORD as Rumford Professor, the department of chemistry is provided for, and it is Mr. L.'s design, by this generous donation, to place the three Professorships on an equal pecuniary footing. We are pleased to learn that the corporation has taken measures for carrying into immediate effect the object of the donor, whose name, by this splendid act, will be held by posterity in grateful remembrance.

Did space permit, we should be glad to copy the whole of Mr. LAWRENCE's very interesting and instructive letter; but at present we can only give place to the following extract, in which some of the defects of our present system of education are strikingly shown:

"For an early classical education we have our schools and colleges. From thence the special schools of Theology, Law, Medicine, and Surgery, receive the

young men destined to those professions; and those who look to commerce as their employment, pass to the counting house or the ocean. But where can we send those who intend to devote themselves to the practical applications of science? How educate our engineers, our miners, machinists and mechanics? Our country abounds in men of action. Hard hands are ready to work upon our hard materials; and where shall sagacious heads be taught to direct those hands?

"Inventive men laboriously reinvent what has been produced before. Ignorant men fight against the laws of nature with a vain energy, and purchase their experience at a great cost. Why should not all these start where their predecessors ended, and not where they began? Education can enable them to do so. The application of science to the useful arts has changed, in the last half century, the condition and relations of the world. It seems to me that we have been somewhat neglectful in the cultivation and encouragement of the scientific portion of our national economy."

DRAINING TILE.—We invite attention to Mr. CHAPMAN's advertisement of draining Tile. A more profitable outlay for the improvement of lands could not be made, in many instances, than for under-draining. A correspondent informs us that he has tried earthen tiles, and found them to answer a very satisfactory purpose. He observes—"along the valley of the Connecticut, between Springfield and Hartford, there are hundreds of acres, the value of which I believe would be increased ten fold by being under-drained, at a comparatively small expense."

THE SEASON AND CROPS.—Since our last, the weather has been rather cold for summer, and vegetation continues backward. This is particularly the case with Indian corn, which requires a high degree of heat to produce a rapid growth. As to wheat, we are inclined to think, judging from all the accounts we receive, that the crop will be less than an average one. The country east of the Alleghenies and south of Pennsylvania, may, perhaps, give an average yield. In the southern part of the district mentioned, the harvest has already, (June 19th,) been gathered, and it is spoken of as good. From most sections of the west, however, the crop is described as not very promising. It was first injured by the winter, and since by the fly. In some neighborhoods, however, it has escaped these injuries, and will give a fair yield. The cool weather has not been unfavorable to wheat, rye, and oats; but unless July and August should give us steady and uninterrupted heat, we fear that our favorite staple, Indian corn, will afford but poor returns. Nothing can as yet be predicted in regard to the potato crop.

NOTICES OF NEW PUBLICATIONS.

THE CULTIVATION OF FLAX; the Fattening of Cattle with Native Produce; Box-Feeding and Summer-Grazing; by JOHN WARNES, Esq., dedicated to the Landlords and Tenants of Great Britain and Ireland. London: CLOWES & SONS.

THIS is a work which was published in England during the past year, and has attracted considerable attention. Its main object is to encourage the cultivation of flax in that country. The inducements for engaging in the cultivation of the article, are, first, the great value of the seed, when properly used, for the fattening of animals, and second, the value of the lint for various manufacturing purposes. Mr. WARNES, the author of the work, has invented a "compound" for feeding cattle and sheep, which he thinks of great value to the farmer, and which appears to be highly recommended by many persons who have given it a trial. We have often seen notices of this article in the English and Scotch publications, and have on several occasions alluded to it in the *Cultivator*. Whether the

"compound" can be profitably used in this country, has not yet been ascertained; but we should think it especially deserving a trial, and have but little doubt that it will prove valuable in those parts of the country where produce bears the highest price. The mode of preparing "compound" for sheep, is given in substance as follows:

A quantity of linseed, or flax-seed, is first reduced by a mill or a machine. Put 168 lbs. of water into an iron boiler, and as soon as it boils, stir in 21 lbs. of linseed meal; continue to stir it for about five minutes, then let 63 lbs. of crushed barley be sprinkled by the hand of one person upon the boiling mucilage, while another rapidly stirs and crams it in. After the whole has been carefully incorporated, which will not occupy more than five or ten minutes, cover it down and throw the furnace-door open. Should there be much fire, put it out.

For cattle, the same process is to be observed, but the quantity of water is reduced to about 150 lbs. It is stated, also, that the seed and grain should be more finely reduced for cattle than for sheep, as sheep chew their food better, and more thoroughly digest it. The compound is put while hot into shapes like brick moulds. Several of the boxes are made together, in one frame—the frame being about 28 inches long, and ten wide, with neither top nor bottom. When used, it is placed on a board, which should be a little longer and wider than the frame. The "compound" is pressed into these moulds, and afterwards left to dry. Potatoes, carrots, turneps, or mangel wurtzel, boiled and incorporated with the linseed meal, form a compound upon which cattle fatten with great rapidity.

Mr. COLMAN, in noticing this process, says—"I place the fullest confidence in these statements of Mr. Warnes. From my own experience and observation. I am convinced that no more nutritious or fattening food can be given to animals, swine excepted, (as it gives an unpleasant taste to the pork,) than cooked linseed or flax-seed jelly, in certain proportions; and it may be mixed with cut hay, or with various other articles of food, with equal success."

Mr. WARNES' book contains, also, particular directions in regard to the culture of flax, and the best modes of preparing it for the different kinds of manufactures. Altogether it is a valuable volume.

THE HORTICULTURIST AND JOURNAL OF RURAL ART AND RURAL TASTE. Vol. I. Edited by A. J. DOWNING, author of "Landscape Gardening," "Designs for Cottage Residences," "Fruits and Fruit Trees of America," etc., etc.

WITH the June number, the first year of this work was brought to a close. Many doubts were expressed whether a work of this character would be sustained by the public taste. Aware, as we were, of the progress of taste and improvement in rural matters, we had no doubt but such a work, under the editorial charge of a gentleman so competent in every respect to conduct it, as Mr. DOWNING, would meet with such a demand as to insure its permanence, and we are gratified to learn that such has been the result. Its circulation has already reached to nearly 3000 copies per month, and so flattering are its prospects for the future, that Mr. DOWNING has withdrawn from his commercial business, that he may devote his time more exclusively to the *Horticulturist*. As a writer on rural subjects, he has no equal in this country, while he has shown in the volume before us, that he also possesses the peculiar tact, and the industry so necessary to qualify even a good writer of books, for an editor. The work is neatly printed on fine paper—is illustrated by twelve plates, and numerous other engravings of buildings, trees; plants, &c., bound in printed muslin, and forms a beautiful volume of 572 pages.

The July number of "THE HORTICULTURIST"

the first number of the second volume, is already issued. Among its contents, are the Influence of Horticulture, Design for a Rural Cottage, Architectural Gossip, Hints on the Culture of Geraniums, Descriptions of five fine new Apples, Letter from N. Longworth, The New Japan Lillies, Effects of the Seventeen year Locusts upon the Roots of Trees, Reviews of New Works; Foreign and Domestic Notices, Proceedings of Horticultural Societies, &c., &c.

Terms—\$3 per year. Published by LUTHER TUCKER, at the office of the Cultivator, Albany, N. Y.

TRANSACTIONS OF THE NEW-YORK STATE AGRICULTURAL SOCIETY for 1846.

This volume, the publication of which has been delayed by unavoidable circumstances, is now ready for delivery. It embraces 716 pages, in the usual form, and contains the details of the Society's operations for the last year, together with an abstract of the returns from every agricultural society in the state, and also the Report of the American Institute for the same period. It contains, besides, several elaborate and interesting communications and essays, and in all respects reflects credit on the Secretary, (Mr. JOHNSON,) under whose supervision the work has been compiled and published. A notice of some of the articles will appear next month.

A DICTIONARY OF MODERN GARDENING; by GEORGE WILLIAM JOHNSON, Esq., author of the Principles of Practical Gardening, the Gardener's Almanack, etc., with one hundred and eighty wood cuts: Edited, with numerous additions, by DAVID LANDRETH, of Philadelphia. LEA & BLANCHARD.

THE plan of this work is similar to that of dictionaries in general—that is, the subjects are arranged in alphabetical order. The subjects are treated in an able manner, and many of them are illustrated by well executed cuts. It is in all respects well "got up," and as a work on gardening will prove highly useful.

PRICES OF AGRICULTURAL PRODUCTS.

New-York, June 19, 1847.

FLOUR—Genesee, per bbl., \$7.87½—Ohio and Michigan, \$7.75.

GRAIN—Corn, Northern yellow, per bushel of 56 lbs., \$1.01 a \$1.05—Wheat, white, per bushel, \$1.90 a \$1.95—Red \$1.75—Oats, per bu., 54 a 56c.

BUTTER—Orange County, per lb., 18 a 19c.—Western, dairy, 13 a 16 cents.

CHEESE—Per lb., 7½ a 8c.

BEEF—Mess, per bbl., \$12.50 a \$13.25—Prime, \$9 a \$9.50.

PORK—Mess, per bbl., \$17 a \$17.12½—Prime, \$16.25 a \$16.37½.

HAMS—per lb., smoked, 10½ cts.

LARD—Per lb., 9½ a 10½ c.

COTTON—New Orleans and Alabama per lb., 8½ a 14½ c.—Florida, 8½ a 14c.—Upland, 8½ a 14c.

WOOL—(Boston prices.)

Prime or Saxon fleeces, washed per lb.	45 a 50 cts.
American full blood fleeces	40 a 45 "
" three-fourths blood fleeces	35 a 38 "
" half blood do	30 a 31 "
" one-fourth blood and common	26 a 28 "

REMARKS.—Since the arrival of the Cambria at Boston, on the 17th, the market has been rather unsettled. A decline in American flour of three to four shillings sterling per barrel, equal to seventy to ninety-two cents, had been experienced in England. In relation to the state of our market, a cotemporary remarks under date of the 18th, "there were more sellers than buyers, and the market was weakened; Genesee could be bought at \$7.87½, and one lot of 2000 barrels might have been had at \$7.75 a \$7.87½. The aggregate sales are about 8000 barrels, mostly at \$8. To arrive 1000 barrels sold for July, at \$7.25. The orders for shipment, as far as can be learned, are small, and the limits low; it is believed there were no orders from England in market to day, but there was some inquiry for France."

In relation to the causes which have produced the decline in England, the *Mark Lane Express* of 31st May observes:

"The chief, if not the only alteration in our favor, appears to us to be that the harvest, which threatened to be a very late one, may now be reasonably calculated to commence as early as in average years; whilst there is nothing about the aspect of the crops to give rise to any fear as to the probable yield. This is certainly an immense point gained, as we are likely to have the new crop ready for consumption three weeks earlier than was supposed would be the case, which will make a great difference in the quantity required to be imported. The cessation of exportation to the continent has, besides, done away with an extra drain on our stocks; and the reaction in prices thus far appears, therefore warranted by circumstances."

WILCOX'S IMPROVED GRAIN CRADLES.



One of the best, lightest, and cheapest in use—with warranted scythe, complete, at \$3.35.

Also, I. T. Grant's Celebrated Premium Cradles, constant on hand, and for sale at the Albany Agricultural Warehouse.

L. TUCKER.

July 1.

HORSE POWERS AND THRESHERS.

THE subscriber furnishes the above machines of all kinds at wholesale or retail.

It may be unnecessary again to call attention to the great superiority over all others for the price, of the "Warren Two and Four Horse Powers and Threshers," (which have been so very much improved the last year,) as the many who have purchased and are purchasing, testify.

The undersigned is also enabled again to add his testimony in favor of these machines, as being far before any others he has seen or heard of, after travelling extensively in the southern and western states, and Texas, during the last five months.

Orders for Corn Shellers, Corn Mills, Corn and Cc. Crushers, Plows, and all kinds of Agricultural Machines and Implements, will be promptly attended to.

JAMES PLANT,

5 Burling Slip, N. Y. City.

A BOOK FOR EVERY FARMER.

8,000 sold in Six Weeks.

JOHN P. JEWETT & Co., 23 Cornhill, Boston,

HAVE just published one of the most valuable works for farmers ever issued from the American press, entitled THE AMERICAN VETERINARIAN, or DISEASES OF DOMESTIC ANIMALS,

showing the causes, symptoms, and remedies, and rules for restoring and preserving health by good management, with directions for training and breeding. By S. W. Cole, editor Agricultural department Boston Cultivator.

Mr. Cole has spent several years in compiling and testing the facts he now offers to the farmers of this country. He has produced a work of great value to every man who keeps but a single horse or cow, but to the practical farmer its value can hardly be over estimated. The whole subject of the *Treatment of Domestic Animals*, is treated in the most thorough manner, comprising the Horse, Ox, Cow, Sheep, Hogs, Dogs, Hens, Turkeys, Geese, Ducks, Birds, Bees, &c., &c. The whole is compressed into one volume of 288 closely printed pages, with 7 beautiful wood engravings, firmly bound in leather. To be sold at the low price of 50 cts., in order to bring it within the means of every man. No pains or expense have been spared on the part of the author or the publishers, to produce a work worthy a place in every Farmer's library.

For sale at the office of "THE CULTIVATOR," and at the principal Book and Agricultural Stores in the country.

JOHN P. JEWETT & Co.

I. T. GRANT & CO'S PATENT PREMIUM FAN MILLS.

THE subscribers, manufacturers of these celebrated mills, having enlarged their manufacturing establishment, hope to be enabled hereafter to supply promptly the rapidly increasing demand for that article. These mills have been repeatedly tried, and the principle upon which they operate thoroughly examined and tested by committees appointed by the State Agricultural Society, and in every instance have been declared greatly superior to any that have come in competition with them. They have taken the first premium at four of the New-York State Agricultural Fairs, (being all at which they have been exhibited,) and at the State Fairs in Pennsylvania and Maryland. Our mills took the first premium, at the Fair of the American Institute in 1846, and they received the highest consideration at the great National Fair, recently held at the city of Washington. Wherever they have been exhibited, they have received the unqualified commendation of agriculturists, and are believed to be the only mills ever invented or manufactured, that will chaff and screen wheat perfectly clean (and at the rate of one bushel per minute) at one operation, taking out the chaff, cockle and smut at the same time. They will also thoroughly clean all other kinds of grains and seeds by running it through once. We manufacture four sizes, varying in price from \$21 for No. 1, to \$27 for No. 4, and have no hesitation in warranting them superior to any thing of the kind now in use.

We also manufacture very superior Grain Cradles, which have taken the first premium wherever exhibited.

Our Fan Mills and Cradles are for sale at factory prices at the following places:

John Mayher & Co., 195 Front-st., New-York.

E. Whitman, 55 Light-st., Baltimore.

Denslow & Webster, Savannah, Georgia.

Fitzhugh Coyle, Washington City.

Baggs & Parsons, Springfield, Mass.

Pierce, Sweet & Co., Burlington, Vt.

J. W. Howes, Montpelier, Vt.

Luther Tucker, 10 & 12 Green-st., Albany, N.Y.

H. Warren, Troy.

J. S. & J. Brown, Newburgh.

Orders thankfully received and promptly attended to, and all goods delivered at Troy, N. Y., free of charge.

I. T. GRANT & Co.

Junction P. O., Renss. Co., N. Y., July 1—18.

DURHAM BULL—TO BE SOLD.

THE thorough-bred Durham bull "Prince Albert," will be sold at Saratoga Springs, in September, at the Show of the New-York State Agricultural Society. He is six years old—a roan—and very manageable. For a portrait and description of "Prince Albert," see the Cultivator of August, 1845; and for his pedigree see the British Herd Book, vol. IV., page 382. His sire was the celebrated bull "Sir Thos. Fairfax." The stock of "Prince Albert" has proved to be superior for dairy purposes.

ROBERT DONALDSON.

Blithewood, July 1—3t.*

SHORT-HORNS FOR SALE

THE subscriber has on his farm a few spring calves, (bulls and heifers,) which he will dispose of when 3 to 4 months old, at \$75 to \$100 a piece.

These animals were all got by his premium bull Meteor, a descendant of his imported bull Duke of Wellington, and heifer Duchess, both of which latter animals he imported from the celebrated Short-Horn herd of Thomas Bates, Esq., Yorkshire, both possessing the blood of his Duchess tribe. The calves offered for sale, are from good milking Short-Horn cows, and having through the bulls Duke of Wellington and Meteor, some half, and others three-quarters of the blood of the Bates bulls, they will be valuable to such as wish to improve their herds.

GEO. VAIL.

Troy, June 16, 1847.—2t.

SALE OF SHORT HORNED CATTLE.

IN consequence of being overstocked, I will sell at auction, at my residence in the town of Auburn, on Wednesday, 8th of September next, forty head of thorough-bred Short Horn cattle; consisting of about thirty cows and heifers, and ten young bulls. I shall select from my whole herd, one bull, ("Symmetry,") two cows, and two heifers, which I shall not offer for sale. The remainder of the herd, being about forty, will be sold *without reserve*. The original cows of this herd were selected from the best of the herds of the late Patron, S. Van Rensselaer, Francis Rotch, Esq., and L. F. Allen, Esq., whose reputation as breeders of fine stock requires no comment from me. The younger stock were reared with much care from my bulls "Archer" and "Symmetry," both of which have received the prize for the best Short-Horned bull, at the Exhibitions of the New-York State Agricultural Society. Archer was bred by Francis Rotch, Esq., of Butternuts, out of his famous imported cow "Adaliza," and got by Rolla. [See Coats' Herd Book, No. 4991.]

"Symmetry" was bred by Geo. Vail, Esq., of Troy, out of his cow Duchess, and got by his Duke of Wellington,—[see Coats' Herd Book, No. 3654, or American Herd Book, No. 55.]—both of which he imported from the herd of Thomas Bates, Esq., of Yorkshire, England. Full pedigrees will be printed and ready by the 1st of July, to be had at the offices of the American Agriculturist, Cultivator, and Agricultural Rooms, Albany, Genesee Farmer, Rochester, L. F. Allen, Black Rock, or at my residence.

I will also sell ten three-fourths and half bred cows and heifers. After the sale of the above cattle, I will sell at auction one hundred Merino rams, 10 to 15 South Down rams, Sixty Merino, and thirty grade Merino ewes—the ewes to be sold in pens of three.

That gentlemen not acquainted with my flock of sheep, may form some opinion of their nature, I make the following statement, viz:—

I have taken five clips of wool from my sheep; the clip of 1846 averaged a fraction over four lbs. per head; this was the largest. One of the five clips I sold at thirty-nine cents. The other four I sold to one manufacturing company, at different times, at forty cents per pound, *all at my own house*.

Terms of sale, *cash* or approved endorsed notes, payable at the Bank of Auburn, at three months, with interest.

J. M. SHERWOOD.

Auburn, Cayuga Co., N. Y., July 1, 1847.—3t.

A YOUNG MAN who for a number of years has been employed in a wholesale mercantile house, wishes to engage in agriculture. He uses the Cultivator as the organ to speak to some agricultural gentleman who would be pleased to give him a favorable opportunity in the business. A small farm, good land, in a pleasant neighborhood, in New-York or Vermont, he would hire, with a view of purchasing. Any having such, disposed to address post-paid, "Agriculture," Troy, N. Y., may find it to their advantage. His recommendations will be good beyond question.

July 1—1t*

VALUABLE PROPERTY FOR SALE.

THE farm in the town of Halfmoon, and county of Saratoga, at present owned and occupied by John Strachan, containing 551½ acres—of which 427½ are arable, and 124 in woodland. This property is pleasantly situated along the west bank of the Hudson river, six miles above Waterford and Lansingburgh, ten from Troy, and fifteen from Albany, at all of which there is a ready market for farm produce of every kind, and to all which there is convenient access by the Whitehall turnpike, Champlain canal, and Rensselaer and Saratoga railroad, all of which intersect the property. The land, houses, and fences, are in good order. Attached to the mansion house is a large picturesque garden, well stocked with fruit trees and bushes in full bearing—together with a variety of ornamental trees and shrubbery.

If not sold in one lot, it will be subdivided into two or more, to suit purchasers. Part of the price may remain on mortgage for several years if desired.

Further particulars may be obtained by application to the proprietor on the premises, or to PORTER & WALDRON, Waterford.

July 1—1t*

DRAINING TILE,

MADE, and for sale by JAMES CHAPMAN.
Enfield, Ct., July 1, 1847.—3t.

FOR SALE.

A FEW very superior Paular Merino sheep—very heavy shearers, and of fine quality; 25 yearling bucks, large and likely, of long staple, and very thick wool. Also, from 50 to 75 ewes, from one to four years old, that are nice, and cannot be matched in the state. For further particulars, inquire of the subscriber at Newport, R. Island.

JOSEPH I. BAILEY.

July 1—3t.

ROCHESTER COMMERCIAL NURSERY.

BISSELL & HOOKER have sold an interest in this establishment to Mr. W. M. SLOANE, and the business will hereafter be conducted by and in the name of

BISSELL, HOOKER & SLOANE,

who will execute with fidelity all orders addressed to them.

Mr. HOOKER will visit England and the Continent during the coming winter, for the purpose of purchasing rare trees and plants, and executing any commissions that may be entrusted to him by nurserymen or others. He will leave here about the 1st of December next, and on his return will sail from Liverpool as early next spring as all trees can be moved. He will personally superintend the packing of all his purchases, and accompany them home *per steamer*, unless otherwise directed.

Post-paid communications promptly answered, and orders respectfully solicited.

Rochester, July 1, 1847.—1t.

FARMER AND GARDENER WANTED.

THE subscriber is in want of a good farmer to carry on a large farm, considerably improved. Liberal terms would be granted to a suitable man; and among other conditions, one of several smaller farms, owned by the subscriber, or 200 to 300 acres, might be set apart for him, at a low price, on which he might enter on the expiration of his engagement; and in the meantime, improvements, such as buildings, fences, &c., could be made on it on fair terms for his account. He could also be assisted in procuring cattle, sheep, &c., at fair prices.

The subscriber is also in want of a gardener,—one who is well practiced in horticulture. Liberal terms as to monthly wages would be given, or he might receive a share of the products; or if desired, he might receive at the end of five years a farm, which may be selected and the price agreed on in advance. Should he need it, other assistance would be rendered to a good and faithful man. Address

JOHN SHILLABER

Dixon, Ill., May 25, 1847.—1t.

ONE OF THE GREATEST INVENTIONS OF THE AGE.

KEPHART'S PATENT FRUIT AND VEGETABLE PRESERVER—by the use of which Fruits, Vegetables, Butter, Eggs, Bacon, &c., can be had at all seasons of the year—possessing all their natural juices and flavor.

The undersigned, having purchased the above patent right for the United States and Territories, excepting the states of New-Jersey, Delaware, Maryland, and the cities of New-York and St. Louis, invite the attention of the public to an examination of the scientific principles upon which the above invention is based, as well as its practical utility. For a particular description of the Preserver, see the Cultivator for July, 1847, page 217. They offer for sale patent rights for the construction and use of the Preserver, by states, cities, counties, towns, or individual rights, upon terms that will induce all interested in the growth or sale of fruit and vegetables; also dealers in butter, eggs, or in the curing and preservation of meats, to purchase rights and construct houses.

All desirous of a farther knowledge of the operations of the preserver, can see one in operation, either by calling upon P. Kephart, Western Hotel, Baltimore, Md., who is our authorized agent, or upon the subscribers, Coats-st. Wharf, near Fairmount, Phila.

All communications will receive prompt attention if addressed either to P. Kephart, Baltimore Md., or FLACK, THOMPSON & BROTHER, Spring Garden P. O., Philadelphia, Pa.

July 1—1t.

VIRGINIA LANDS.

THE subscriber has about 800 acres of land lying within two miles of Manchester, and three miles from Richmond, the capital of the state. About one third is cleared, and a part is under cultivation; the balance is in wood, of the usual kinds in this part of Virginia—pine, oak, &c. There is a railroad running through it, having about half on one side, and half on the other. The lot was formerly the property of two different owners, and there are good buildings on both, with all necessary out-houses, and good wells of water. The land lies level, and is of easy access from Manchester and Richmond, both which are places of undoubted healthiness.

The produce of the farm, including wood and timber, can at all times be sold at full prices. The railroad runs down to the shipping, and it is believed that with proper management, the wood and timber would pay twice the cost of the land. A part of the land sold in 1818, for \$30 (thirty dollars) per acre. The present object is to sell it in large or small tracts, for cash or credit; or to offer inducements to some company of northern men—say eight or ten, a portion having families, to come out and cultivate on shares. Any communications directed either to Manchester or Richmond, will receive prompt attention.

GREEN HALL.

Manchester, Virginia, May 27, 1847.—1t.

FOR SALE.

SHORT HORN and **Devon Cattle**—each thorough-bred of their kind. The cattle of these stocks have been bred many years by the subscriber, and were originally selected from the best herds, and crossed with the best and latest imported blood, with a particular view to the development of their most valuable qualities.

Also, thoro'-bred **Cotswold**, (long-wooled,) and **South Down Sheep**, of the best descriptions, descended from the choicest English flocks.

They can be forwarded from here east and north, by canal and railroad, and west by steamboat, with safety and dispatch.

LEWIS F. ALLEN.

Black Rock, N. Y., April 1, 1847.—ap & j'ly.

HORSE POWERS AND THRESHERS.

THE attention of farmers is invited to **Wheeler's Patent Horse Powers**, an engraving and description of which is given in the *Cultivator* for Feb., 1847. Among the advantages of this power are its compact size and lightness, and the ease with which sufficient speed can be obtained for threshing, without gearing, and consequently greatly lessening the friction. It will be found a great labor-saving machine, as it may be attached to Threshing Machines, Circular Saws for sawing, Straw-Cutters, or any other machine which it is wished to impel by motive power. Price, for single horse power, \$75—for two horses \$95.

Also, **Wheeler's Spike Thresher**, with a cylinder of 14 inches in diameter, and 22 inches long, with the concave filled with spikes on the upper side, thus avoiding accidents by preventing stones or other substances getting into the Thresher. Another advantage of this Thresher is, that it scatters the grain much less than many others. Price, \$28—with Separator attached, \$35. The Separator divides the straw and grain, by a shaking motion which it receives from a crank attached to the Thresher, thus saving the work of one or two men with rakes.

With this Horse Power and Thresher, 200 bushels of oats, or 100 of wheat may be threshed per day, with a change of horses.

The above machines constantly on hand at the **Albany Agricultural Warehouse and Seed Store**, No. 10, Green-street.

June 1, 1847.

LUTHER TUCKER.

KINDERHOOK WOOL DEPOT.

THIS enterprise has been in successful operation for the past two years, and has fully met the expectations of the wool-growers, who have been its patrons and projectors. It will be continued the present year, conducted as heretofore. The subscriber will be prepared to receive wool as soon after shearing as may be convenient for the growers to deliver it. The fleeces will be thrown into sorts according to *quality and condition*. Those who desire it can have their clip kept separate, and sold when ordered. A discrimination will be made between wool in good or bad condition. Sales will be made for cash, and the owners can rely on prompt returns. The charges for receiving, storing, sorting, and selling, will be one cent per lb. and insurance. Liberal advances in cash made on the usual terms. Sacks will be forwarded to those who wish, by their paying the transportation and 12½ cents each for their use, or if furnished by the owner of the wool, will be returned, or sold at their value, as he may direct.

Reference can be had to Dr. J. P. Beekman, Kinderhook, D. S. Curtis, Canaan, C. W. Hull, New Lebanon, Col. Co., J. B. Nott, Esq. Albany, D. Rogers, Hoosick, Rens. Co., C. H. Richmond, Esq., Aurora, Cayuga Co., Col. J. Murdock, Wheatland, Monroe Co., N. Y.

H. BLANCHARD.

Kinderhook, June 1, 1847.—3t.

CORN MILLS.

THE subscribers have just received at their **Agricultural Warehouse**, a newly invented cast-iron mill, for grinding corn and other grain, either by hand or horse-power. It will grind from 3 to 4 bushels per hour. Price, \$30.

Also the hand Corn Mill, which grinds from 1 to 1½ bushels per hour. Price \$6.50.

These mills are highly economical and convenient, and every farm and plantation ought to have them. They are simple in construction, not liable to get out of repair, and are easily operated. When one set of plates is worn out, they can be replaced at a trifling cost.

A. B. ALLEN & Co.,

May 1—3t.

187 Water-st., New-York.

PERFECTION AND YOUNG ALFRED

WILL stand the ensuing season at my stable, 3 miles southwest of Geneva.

Terms—Perfection, \$10 by the season. Young Alfred, \$6. Insurance to be agreed upon.

Pasturing will be provided for mares from a distance, and attention given them. Accidents and escapes at the risk of the owners.

PEDIGREE.—Perfection.—Sire, imported horse Alfred; dam, imported mare Blossom. To Perfection was awarded, at the late State Fair, a discretionary premium for the best 3 years old, in the 1st class—also the first premium in Ontario Co.

Young Alfred's dam drew the 1st premium at the State and County Fairs, in 1845.

GEORGE FORDON.

June 1—2t*

SPANISH MERINO SHEEP.

FOR sale a few choice Merino sheep—bucks and ewes—of undoubted purity of blood, and a quality that will give satisfaction to purchasers. They can be sent west by canal, at the subscriber's risk.

R. J. JONES.

Cornwall, Vt., June 1, 1847.—tf.

PLOW! PLOW!!

THE attention of Farmers and Dealers is particularly invited to our assortment of Farming Tools—among which may be found a complete assortment of the most approved as well as common plows, including all sizes of the Center Draft, Side-Hill, Subsoil, Self-Sharpening Plows, from Messrs. Prouty & Mears, of Boston. Also, the Eagle, Subsoil, Side-Hill, Self-Sharpening, and others, from Messrs. Ruggles, Nourse & Mason, of Worcester, Mass. Also, the Peekskill Plow, all sizes, from Minor & Horton, of Peekskill, N. Y., and Delano's Diamond Plow—all for sale at the manufacturers' home prices, and warranted. The adjustable Steel Point Self-Sharpening Plows, from the factory of Messrs. Ruggles, Nourse & Mason, is just received. This is a new improvement in the wearing parts of the plow, and has several advantages over the common plows in use. (See R. & N.'s advertisement.) Also on hand Cultivators, Harrows, Seed-Sowers, and Planters, Ox-Shovels or Scrapers, Field Rollers, &c., &c., &c., at the Albany Agricultural Warehouse and Seed Store, Nos. 10 and 12 Green-st., Albany, N. Y.

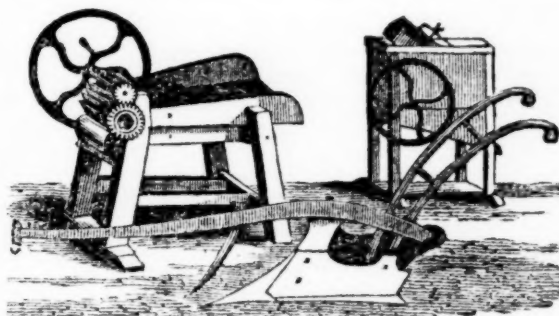
L. TUCKER.

STOCK FOR SALE.

MATCH and single Horses, some of which can trot their mile under three minutes, others rack and gallop easily, making admirable saddle-horses for ladies and gentlemen; Durham, Devon, Hereford, and Ayrshire Cattle; Merino, Saxon, South-Down, and Leicester Sheep; the large white English breed of Swine; Berkshires, Poultry, &c., &c. Apply to

A. B. ALLEN, 187 Water-Street, New-York

March 1, 1847.—tf.



JOHN MAYHER & CO.

U. STATES AGRICULTURAL WAREHOUSE.

No. 195 Front-street, (near Fulton.) New-York.

Foundry and Machine Shop 502 and 504 Water-st.

THE subscribers respectfully invite the attention of Merchants and Dealers in AGRICULTURAL IMPLEMENTS to the superior assortment of goods which they manufacture, embracing Plows and Castings of the most approved kinds in use, and possessing all the latest improvements in style, workmanship, and material, among which are the following articles, that can be seen at their warehouse:

Pitts' Corn and Cob Crusher.	Minor & Horton's Plows, all k'ds;
Price. \$40	Worcester Eagle do.
Sinclair's do.—hand or horse.	\$30 Mayher & Co.'s Eagle improved
Fitzgerald's Patent Burr Stone	Plows;
Corn Mill,	\$60 Mayher & Co.'s much approved
Sinclair's Cast Plate Corn	Plows;
Mill,	\$40 Langdon's Horse Hoe Plows;
Swift's Corn, Coffee, and	Castings to fit all kinds of Plows
Drug Mill,	\$6 to \$8 in use;
Hovey's far-famed Hay, Straw,	Mayher & Co.'s 2 Horse Power,
and Stalk Cutter;	Price. \$55
Sinclair's Hay, Straw, and Stalk	do. do. 4 do. \$75
Cutter;	do. do. 2 Thresher, \$25
Greene's do. do. do.	do. do. 4 do. \$30
Mayher & Co.'s do. do.	John Mayher & Co.'s First Pre-
Langdon's do. do. do.	mium Corn Sheller;
I. T. Grant & Co.'s Premium	Burrall's Corn Sheller;
Fanning Mill;	Warren's do. do.
J. Mayher & Co.'s do. do.	Sinclair's Corn Sheller and Husk-
Boston Centre Draught Premium	er;
Plows.	Pitt's Horse Power and Thresh-
Bergen's Self-Sharpening Plows;	ing Machine;
Dutcher's Plows of all kinds;	E. Whitman's Jr., Thresher and
Hitchcock's do. do.	Separator;
Freehorn's do. do.	Subsoil Plows of different kinds.

Cultivators, Wheelbarrows, Canal Barrows, Store Trucks, Horse and Ox Carts, Mule Wagons, Ox-Yokes and Bows, Hames, Traces and Ox Chains, Road Scrapers, Ground Augurs, Shovels, Spades, Pick Axes, Hay and Manure Forks, Rakes, Hoes, Scythes, Scythe Snathes, Grain Cradles, Crow Bars, &c., &c., all of which will be sold as cheap as they can be bought at any other store in the city, and are warranted.

Gin Gear, Segments, Rag Wheels, &c.

Castings of all kinds made to order.

March 1, 1847.—tf.

HAY AND HARVESTING TOOLS.

REVOLVING HORSE RAKES.—These valuable implements save a great amount of labor—a man and horse being able to perform as much with one of them as eight men could do with hand rakes. Those offered are of the most approved construction.

GRAIN CRADLES, of very neat and superior construction.

June 1.

LUTHER TUCKER

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Just published, in one large octavo volume, illustrated with Twelve Plates, and over One Hundred other Engravings, neatly bound in muslin—price \$3.50—

THE HORTICULTURIST, and JOURNAL OF RURAL ART AND RURAL TASTE, Vol. I., by A. J. DOWNING, Esq., Author of "Landscape Gardening," "Designs for Cottage Residences," "Fruits and Fruit Trees of America," &c. This volume embraces,

I. Designs for Villas, Cottages, Country Houses, Ice Houses, Vineries, Gates, &c., &c., with 23 engravings, with Descriptions and Estimates, and Remarks on the Color of Country Houses.

II. Remarks on Landscape Gardening, the Seeding and Management of Lawns—Planting and Management of Hedges—Selection, Culture, and Description of Ornamental Trees, &c., &c. with 16 Illustrations.

III. The Description and Cultivation of Fruits and Fruit Trees, and the Treatment of the Diseases to which they are subject. This department embraces Figures and particular Descriptions of Apples, Cherries, Figs, Gooseberries, Oranges, Peaches, Pears, Plums, Raspberries, Strawberries, &c., with nearly 50 Engravings, mostly figures of Fruit.

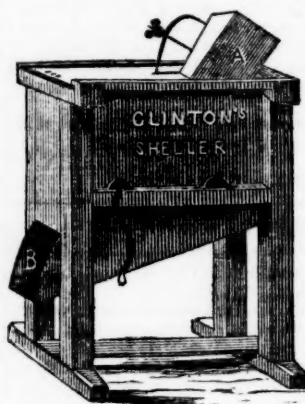
IV. Description and Cultivation of select varieties of Flowering Plants and Shrubs, with 30 engravings.

V. Gardening in general, Botany, Entomology, Rural Economy, &c., &c.

It will be seen from this enumeration of the subjects embraced in this volume, that it is just such a work as is required by the rural population of our country, furnishing, as it does, the information, designs, suggestions, &c., necessary to enable our Farmers and Horticulturists to erect tasteful and convenient residences and out-buildings, and to beautify and adorn them with lawns, ornamental trees and flowering shrubs and plants, and to furnish them with the choicest varieties of Fruits and Vegetables the year round. Copies of the first volume, stitched, can be sent by mail—Price, \$3—postage 37 cents.

The first number of the second volume of "THE HORTICULTURIST" will be issued on the first of July, and continued on the first of each month—each number containing 48 pages octavo, embellished by a plate, and numerous other engravings. Terms, \$3 a year. Published at the office of "THE CULTIVATOR," Albany, N. Y., by

LUTHER TUCKER, and for sale by M. H. NEWMAN & Co., 199 Broadway, New-York—J. BRECK & Co., 52 North Market street, Boston—and by G. B. ZIEBER & Co., Chestnut-street, Philadelphia, by whom subscriptions are received for the second volume.

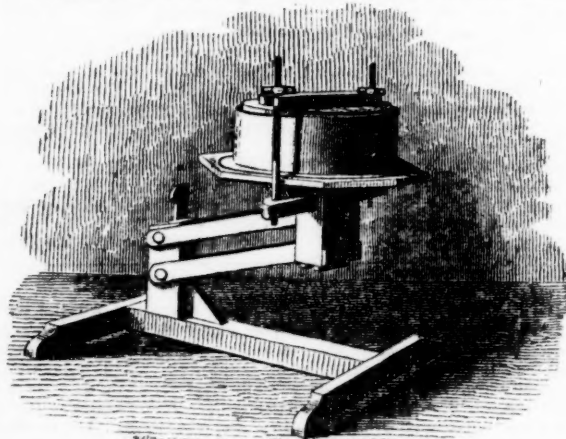
ALBANY AGRICULTURAL WAREHOUSE,
Nos. 10 and 12 Green-st.

AMONG the numerous valuable machines, implements, utensils, &c., for sale at the Albany Agricultural Warehouse and Seed Store, Nos. 10 and 12 Green-street, are the following:

CLINTON'S IMPROVED
CORN SHELLER.

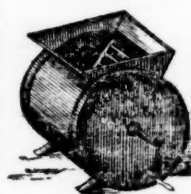
This is a very formidable machine—shafts or axles, all of wrought iron, with wooden frame and box—s adapted for all sizes of ears of corn in the northern, southern, and western states. With single hopper and two men, 200 bushels ears, or with two hoppers and three men, 400 bushels ears are easily shelled per day. Warranted satisfactory. Price, with single hopper, \$10—double hopper, \$13.

COLLINS & STONE'S PATENT CHEESE PRESS.



The above cut represents the most compact, light, strong, and convenient Cheese Press in use. It is constructed with compound levers which cause the cheese to receive a pressure from its own gravity, and more or less, as is desired. The advantages in its use are these: The cheese receives a constant and uniform pressure, and a large or small cheese is pressed in proportion to its weight. Warranted satisfactory. Price—No. 1, \$5.00—No. 2, \$5.50—No. 3, \$6.

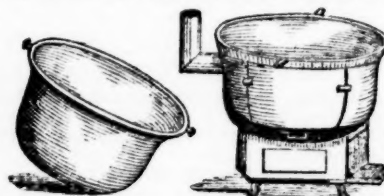
KENDALL'S CHURNS.



Too much has not been said for this labor saving and convenient churn. The sale of them for the last few years, has been unprecedented by any other churn, and so general satisfaction is given by its use, that not one in a thousand has been returned, although all are warranted satisfactory. The prices for this excellent article are as follows:

No. 1, suitable for 2 cows,.....	\$2 00
" 2, " " 3 to 5 do.,.....	2 50
" 3, " " 5 to 8 do.,.....	3 00
" 4, " " 8 to 15 do.,.....	3 75
" 5, " " 15 to 25 do.,.....	4 50

MOTT'S PATENT AGRICULTURAL FURNACES.



Constantly on hand, all sizes of these celebrated furnaces, at the manufacturer's prices, as follows:

15 gallons,.....	\$10	60 gallons,.....	\$23
22 ".....	12	80 ".....	30
30 ".....	15	90 ".....	35
40 ".....	18	120 ".....	40
45 gallons,.....	20		

REVOLVING HORSE RAKES.

A good assortment of these valuable labor-saving machines, from different manufacturers—price, \$7 to \$8. (For an engraving and description, see page 217 of this paper.)

HAY FORKS AND HAY RAKES.

Partridge's Cast Steel Hay Forks, all sizes, warranted the best in the world. Also, Hand Rakes, all qualities, from different manufacturers—75 cts. to \$4 per dozen. LUTHER TUCKER.